

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

CALLAWAY GOLF COMPANY,)	
)	
Plaintiff,)	C.A. No. 06-91 (SLR)
v.)	
)	
ACUSHNET COMPANY,)	JURY TRIAL DEMANDED
)	
Defendant.)	

**ACUSHNET COMPANY'S REPLY MEMORANDUM TO CALLAWAY'S
OPPOSITION TO ACUSHNET'S MOTION TO STAY LITIGATION**

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Dated: May 30, 2006

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I. SUMMARY OF ARGUMENT

Acushnet Company (“Acushnet”) files this reply memorandum in support of its motion to stay this litigation. Acushnet will show that on the particular facts of this case a stay of this action pending the outcome of PTO reexamination proceedings on the four patents-in-suit is warranted. In particular, in this case the PTO has nearly 13 years of extensive experience in dealing with the patent family that includes the patents-in-suit. The PTO has been dealing with scores of patents in this family and pending applications in this family are still before PTO examiners and the Board of Patent Appeals. Further, the reexamination proceeding in the PTO will go forward, notwithstanding Callaway’s efforts to stop them. Thus, a stay of proceedings in this Court will avoid a substantial duplication of efforts involved in conducting another invalidity analysis in this case.

Callaway’s contrary arguments should be rejected. The 1996 Settlement Agreement (“the Agreement”) does not prohibit reexamination proceedings by the PTO. Rather, the forum selection clause specifies only where the parties may bring a lawsuit. Further, the assignor estoppel argument Callaway has raised is wrong and has been rejected by this Court.

II. THE PATENTS-IN-SUIT

A. The PTO Has Over 13 Years of Experience Examining the Patent Family that Includes the Patents-in-Suit

The four related patents-in-suit relate to covers for golf balls. The patents claim a multi-piece golf ball made from specific cover materials having specified properties. The patents-in-suit claim priority from an application first filed in June 1993 and kept alive using so-called “continuation practice.” (including continuation, continuation-in-part, and divisional applications). More than 75 related applications have been filed over the years

and a number remain pending before the PTO and its Board of Appeals. (*See* Ex. A.)¹ As a result, the PTO has nearly 13 years of experience studying and analyzing this family of patent applications and the numerous prior art patents and publications implicated. The golf ball art is crowded and the PTO has significant experience to contribute in its administrative review of the patents-in-suit.

The four requests for reexamination granted by the PTO document a compelling, exhaustive case for the invalidity of the patents-in-suit. Each reexamination request was nearly 100 pages long. (Ex. B (Acushnet's Request for *Inter Partes* Reexamination of the '293 Patent) (without exhibits).) The PTO has analyzed these requests and found that the Patent Act required reexamination of all of the patents-in-suit. Additionally, the PTO Board of Patent Appeals and Interferences recently affirmed the rejection of claims in the same family of patents that are very similar to the claims of the patents-in-suit. (Ex. C (Bd. Pat. App. & Inter., Jan. 30, 2004 in U.S. Pat. Appl. No. 09/873,594); *see also* Ex. A.) The Board has also affirmed the rejection of a number of other applications in this family. These decisions will of course be very relevant in this case.

B. Acushnet's Requests for Reexamination Raise Numerous Substantial New Questions of Patentability

Acushnet's requests for reexamination rely primarily on the teachings of two anticipatory references. These references each anticipate claims of the patents-in-suit. In fact, the PTO has concluded that "Nesbitt Alone" raises substantial new questions of patentability to each and every claim of the patents-in-suit, contrary to Callaway's assertion that this is an obviousness case. Moreover, in the requests for reexamination, Acushnet presented the PTO with facts showing that certain hardness and modulus properties of materials disclosed in the prior art were inherent. These facts were

¹ Exhibit A was created for reasons unrelated to this motion but illustrates the extent of the PTO's experience with the family of patent applications that include the patents-in-suit.

previously unbeknownst to the PTO. Given these new facts, the PTO has undertaken its statutory obligation to reexamine the patents-in-suit.

III. HISTORY OF THIS DISPUTE

This dispute began years ago, before Callaway bought the patents-in-suit from Spalding in September 2003. During the time period between December 2001 through February 9, 2006—when Callaway filed suit against Acushnet in the United States District Court for the District of Delaware—the parties loosely followed the dispute resolution process set forth in the Agreement. (Nauman Decl. (filed herewith) at ¶¶ 3-5.) The parties did not adhere to the time frames specified in the Agreement, and the provisions of paragraphs 19.2 and 19.3 were not followed. (*See id* at ¶ 3.) During these negotiations, Acushnet raised the possibility of reexamination as a dispute resolution tool and Callaway never contended that the Spalding/Acushnet Agreement precluded reexamination by the PTO. (Nauman Decl. at ¶¶ 6-7.)

Acushnet requested that the PTO reexamine the patents-in-suit on January 17, 2006, after negotiations and several meditations with Callaway failed to resolve the dispute.² (Nauman Decl. at ¶¶ 3-6, 8.) The facts belie Callaway's assertion that "Acushnet ... strung along the mediation process, so that it would have time to prepare and preemptively file its reexamination requests." (Pl. Opp. at 6; Nauman Decl. at ¶ 8.) In fact, Mr. McCracken declares that he contacted Mr. Nauman on January 17, 2006 to inform him that Callaway was filing suit the next day.³ (McCracken Decl. at ¶¶ 7-8.)

² The filing dates for Acushnet's requests for reexamination are incorrect in Callaway's declaration. (Halkowski Decl. at ¶¶ 6-9.) Each request for reexamination was filed on January 17, 2006.

³ Mr. McCracken also declares that Callaway golf would "file its patents infringement complaint the next day in District Court in Delaware." (McCracken Decl. at ¶ 7.) The "next day" refers to January 18, 2006, the day after Mr. McCracken contacted Mr. Nauman. However, Mr. McCracken also declares that he asked his "lawyers to hold off on the filing of the complaint on January 17, 2006." (McCracken Decl. at ¶ 9.) Moreover, according to Mr. McCracken's declaration, it was already 5:10 PM in

That same day, Acushnet filed its requests for reexamination. (Nauman Decl. at ¶ 8.)

Thereafter, the parties continued to mediate in what Acushnet believes was good faith.

IV. DESPITE CALLAWAY'S PETITIONS THE REEXAMINATION PROCEEDINGS WILL GO FORWARD

Callaway's multiple efforts to stop the reexaminations should convince even the casual observer that Callaway expects to lose the patents-in-suit in the pending reexamination proceedings. Callaway has filed three petitions with the PTO to stop the reexamination of its patents, even though the PTO is statutorily obligated to conduct the reexaminations. *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed. Cir. 1988). The first petition was denied on April 10, 2006. Another petition requests that the PTO vacate each of its four orders granting reexamination as being *ultra vires*. The third petition requests the PTO suspend reexamination because, Callaway argues, the PTO is not capable of addressing issues including assignor estoppel and evaluating evidence of commercial success. As explained below, based on past PTO practice, the PTO will deny all of Callaway's petitions and conduct the reexaminations. Similarly, Callaway's contention that a ten-year old contract resolving a dispute to which it was not a party prohibits the PTO from conducting reexamination of its patents is also wrong. The Court should reject this argument as well.

A. Callaway's Assertion that the 1996 Settlement Agreement Precludes Reexamination is Wrong

The 1996 Agreement resolved an unrelated patent and advertisement dispute between Acushnet and Spalding & Evenflo Companies, Inc. and Lisco Inc., that arose a decade ago. (Nauman Decl. at ¶ 2.) Callaway claims that the dispute resolution and forum selection provisions of that Agreement ban the PTO from completing its

Delaware. (McCracken Decl. at ¶ 7.) Callaway could not have filed its complaint in this Court after the clerk's office closes at 4:30 PM.

reexamination of the patents-in-suit. However, the Agreement does not preclude the PTO from conducting reexaminations.

**1. The Agreement Limits The Forum for Bringing
“Legal Proceedings,” Not Administrative
Reexamination**

Nothing on the face of the Agreement prohibits either party from asking the PTO to reexamine a patent. Rather, the Agreement requires that *the parties* try to resolve disputes between then using an alternative dispute resolution process and that if ADR fails may bring a lawsuit, but only in this Court. The principal parties to the *inter partes* reexamination proceedings instituted in the PTO will be Callaway and the PTO. Acushnet will have a right to file “written comments” in response to Callaway’s statements to the PTO and Acushnet will have a right of appeal. *See* 35 U.S.C. §§ 314(b)(2), 315(b). As in all matters before the PTO, the PTO is charged with representing the public interest in issuing presumptively valid patents. *In re Gartside*, 203 F.3d 1305, 1318 (Fed. Cir. 2000).

Reexamination, thus is not a dispute “between the parties” within the meaning of the Agreement. Rather, under the Patent Act, reexaminations are conducted by the PTO when the PTO determines that prior art raises “substantial new questions of patentability.” 35 U.S.C. § 312(a). Nothing in the Agreement prohibits the PTO from exercising its statutory duty. Likewise, nothing in the Agreement prohibits either party from petitioning the PTO to review patents that should never have issued. The forum selection provision embodied in paragraph 19.7 of the Agreement addresses only “legal proceedings.” The Agreement does not mention or prohibit “administrative proceedings,” such as reexamination.

Undoubtedly, the outcome of the PTO proceedings may have an effect on the dispute between the parties and the outcome of this litigation. However, it is overbroad and overreaching to suggest that the Agreement prohibits a PTO reexamination simply

because it might effect the present lawsuit. There is no basis to read the 1996 Agreement so broadly.

The closest precedent supports this conclusion. In *Joy Manufacturing*, discussed in Acushnet's opening brief, the Federal Circuit rejected an argument similar to the one that Callaway makes here, that a location clause in a settlement agreement specifying a particular jurisdiction precluded the filing of a PTO reexamination. In *Joy Manufacturing*, the Federal Circuit distinguished between "administrative proceedings" in the PTO and "legal proceedings" in federal court, saying that the agreement only covered legal proceedings. See *Joy Mfg. Co. v. Nat'l Mine Service Co.*, 810 F.2d 1127, 1130 (Fed. Cir. 1987) ("the district court correctly refused to equate "a request for administrative reexamination ... with filing a suit in a United States Court." (emphasis added).); *Joy Techs., Inc. v. Manbeck*, 959 F.2d 226, 229 (Fed. Cir. 1992) (reexamination is an "administrative proceeding," and there was "no basis" for the plaintiff "to recharacterize the statutory procedure established by Congress in the reexamination statute" to be akin to litigation brought in the federal courts.) Moreover, reexamination, an "administrative proceeding," can never be filed in United States District Court—either by the third party requester or by the PTO itself. See *Joy Techs.*, 959 F.2d at 229.

Thus, Callaway's allegations that Acushnet has breached the Agreement is wrong because: (1) Acushnet did not initiate "legal proceedings;" and, (2) the Agreement does not preclude the PTO from performing its statutorily-mandated and important public function of reexamining the patents-in-suit.

2. The PTO Represents the Public Interest in Reexamination Proceedings

A strong public policy supports the PTO's duty to cancel claims that are unpatentable. See 35 U.S.C. § 316(a); *Houston Atlas, Inc. v. Del Mar Scientific, Inc.*, 217 U.S.P.Q.2d (BNA) 1032, 1037 (N.D. Tex. 1982) (noting that there is an important public interest "in eliminating worthless patents.") The Federal Circuit has recognized that

“[w]hen Congress voted the reexamination statute into law, it had before it a voluminous record to the effect that the procedure was an important step forward for the United States patent system and for the public interest that the system is charged to serve.” *Patlex Corp. v. Mossinghoff*, 758 F.2d 594, 602 (Fed. Cir. 1985). This public interest “lies in having valid patents upheld and invalid patents rendered invalid, and *hence patents should be reexamined when a substantial question of patentability is raised.*” *In re Baker Hughes*, 215 F.3d 1297, 1302 (Fed. Cir. 2000) (emphasis added); *see also* 37 C.F.R. § 1.555 (“A patent by its very nature is affected with a public interest.”) The Federal Circuit has held that “[t]he innate function of the reexamination process is to increase the reliability of the PTO’s action in issuing a patent by reexamination of a patent thought ‘doubtful.’” *In re Etter*, 756 F.2d 852, 857 (Fed. Cir. 1985).

Thus, even if Callaway’s interpretation of the contract were plausible (which it is not), the Court should find that a contractual provision preventing a party from seeking reexamination is void as being contrary to public policy. *Bremen v. Zapata Off-Shore Co.*, 407 U.S. 1 (1972) (concluding that a forum selection clause, while generally enforceable, will not be enforced where it violates the strong public policy of the forum in which suit is brought); *Newton v. Rumery*, 480 U.S. 386, 392 (1987) (“The relevant principle is well established: a promise is unenforceable if the interest in its enforcement is outweighed in the circumstances by a public policy harmed by enforcement of the agreement.”); *United Paperworkers Int’l Union v. Misco, Inc.*, 484 U.S. 29, 42 (1987) (“a court may refuse to enforce contracts that violate ... public policy.”); *Suter v. Munich Reinsurance*, 223 F.3d 150 (3d Cir. 2000) (*citing Bremen* for the proposition that federal forum selection clauses should not be enforced where they are contrary to public policy).

B. The PTO Will Deny Callaway's Petitions to Stop the Reexaminations

1. Callaway's Petition to Vacate Reexamination Will Likely Be Denied

The PTO has already assumed jurisdiction over the reexamination of the patents-in-suit and the PTO is obligated to proceed regardless of the Agreement. Therefore, Callaway's petition requesting the PTO to vacate the orders initiating reexamination will likely be denied for the above reasons and for the further reason that the Agreement does not, and cannot alter the PTO statutorily conferred jurisdiction.

2. The Doctrine of Assignor Estoppel is Simply Not Applicable in this Case

Callaway asserts in a PTO petition and in this Court that because an inventor on the patents-in-suit is one of 28 vice presidents at Acushnet, Acushnet cannot challenge the validity of the patents-in-suit. This position is unfounded.

Acushnet is a part of a large, publicly traded, Fortune 500 company—Acushnet plainly is not the alter ego of Mr. Sullivan. Mr. Sullivan does not control or direct Acushnet. Therefore, Acushnet's hiring of Mr. Sullivan cannot preclude Acushnet from challenging the validity of the patents-in-suit. In addition, Mr. Sullivan was not involved with Acushnet's development of the Titleist® Pro V1™ golf balls (the allegedly infringing golf balls)—a factor that almost certainly prevents the application of assignor estoppel to these facts.⁴

⁴ Callaway greatly exaggerates Mr. Sullivan's position and financial stake in Acushnet. Mr. Sullivan is one of 28 Vice Presidents at Acushnet Company. He is not on the Board of Directors at Acushnet and is not even an elected officer of the company. Mr. Sullivan reports to a senior vice president, who reports to an executive vice president, who reports to the Chairman, who ultimately reports to the shareholders. Redacted versions of Acushnet's organizational charts showing where Mr. Sullivan fits into Acushnet's employment structure are attached as Exhibit F.

This case is substantially similar to the *Dunlop-Maxfli* case. This Court found a lack of privity where:

Defendant is not [the inventor's] corporate disguise. [The Inventor] owns an insignificant number of defendant's shares, he **does not sit on its board of directors**, and he holds **no sway over defendants finances or strategic decisions**. Although [the inventor] is a "Vice President of Research and Development," **the record reveals that there are twenty-six "Vice Presidents" in defendant's organizational structure** and, far from being second command as the title suggests, [the inventor] is subordinate to a "Managing Director of Research and Development."

See Acushnet Co. v. Dunlop-Maxfli Sports Corp., C. A. No. 98-717-SLR, 2000 U.S. Dist. LEXIS 10123, *11-12 (D. Del. Jun. 29, 2000) (emphasis added). The same considerations this Court found in the *Dunlop* case are equally present in this case.

In *Dunlop-Maxfli*, this Court recognized that to find a company was in privity with a competitor because the inventor was employed by the competitor would preclude "companies from competing for talented employees." *Id.* (citing *Diamond Scientific Co. v. Ambico, Inc.*, 848 F.2d 1220, 1224 (Fed. Cir.1988)).

Suggesting that Mr. Sullivan is using Acushnet—a company founded in 1910—as his alter ego in connection with Acushnet's requests for reexamination is meritless. Thus, there is no basis to find that Acushnet is estopped from asserting that the patents-in-suit are invalid.⁵

In assessing the applicability of assignor estoppel, the case law also requires examination of "the equities dictated by the relationship between the inventor and company B in light of the act of infringement." *Shamrock Techs., Inc. v. Medical Sterilization, Inc.*, 903 F.2d 789, 793 (Fed. Cir. 1990) (emphasis added). Acushnet's Titleist® Pro V1™ golf ball was in development for years prior to its release, and were

⁵ Moreover, during more than 18 months of negotiation Callaway never once mentioned its theory of assignor estoppel. This is truly a lawyer's argument intended to cloud the issues.

on the market before any of the four patents in suit were issued. Also Mr. Sullivan did not start working for Acushnet until after the accused Pro V1™ golf balls were on the market. Because the Pro V1™ golf ball was released prior to his arrival at Acushnet, Mr. Sullivan had no role in the development of the Titleist® Pro V1™ golf ball. Thus, Mr. Sullivan's position at Acushnet in no way implicates the concerns that sometimes give rise to the equitable doctrine of assignor estoppel. *Cf. Shamrock Techs.*, 903 F.2d at 793 (Fed. Cir. 1990).

3. The PTO is Fully Capable of Addressing Commercial Success and Weighing Evidence

Despite the PTO's experience in examining this patent family for 13 years, Callaway argues that the PTO just isn't capable of evaluating the patentability of these patents. Callaway's unfounded argument has been rejected by the PTO in similar circumstances. (*See* Ex. D ("Decision on Petition to Invoke the Supervisory Authority of the Director" in Reexamination No. 95/000,071) at 4.) Addressing the issue of whether the PTO could properly evaluate evidence relating to patentability, the PTO stated:

[T]he Office possesses a combination of legal and technical expertise unique to patents. In a discussion of the advantages of reexamination proceedings, the House of Representatives Committee on the Judiciary stated that the Office is "an agency with expertise in both the patent law and technology." H.R. Rep. No. 107-120, at *3 (2001). *** As a result of this expertise, the Office would be expected to have less need than a district court to rely on expert testimony in order to answer the factual question of what a reference teaches. *** Nevertheless, if the parties believe such expert testimony be important to the reexamination proceeding, they are not precluded from presenting it to Office in declaration/affidavit form.***According to the Ethicon Court, the advantages of a reexamination proceeding before the Office outweighed any perceived disadvantage regarding consideration of the evidence.

Id.

Callaway's opposition—and its petition to the PTO—suggests that the PTO needs the Court's discovery power because the PTO will not be fully informed and does not

have discovery power of its own.⁶ This assertion is contrary to Callaway's actions before the PTO, where, in obtaining the very patents-in-suit, Callaway filed declarations alleging commercial success. Because the PTO has been and continues to be capable of assessing commercial success, Callaway's petition will be denied.

C. Callaway's Remaining Arguments are Wrong

Callaway says that a stay will irreparably harm it. Acushnet's Titleist® products have been the No. 1 balls in golf for decades. Callaway, before it purchased the patents-in-suit from Spalding, had its own product that allegedly practiced the patents-in-suit on the market months before Acushnet's Titleist® Pro V1™ products became available. Despite the earlier introduction of Callaway's product, Callaway was unable to gain any notable market share during its months of exclusivity. Moreover, even if Callaway is right that it can better compete in the market after this case is resolved, any such loss of market share is compensable by monetary damages. *See Nutrition 21 v. United States*, 930 F.2d 867, 871 (Fed. Cir. 1991). Thus, if Callaway is right and the patents are ultimately held valid by the PTO, it can seek monetary damages to compensate for any alleged loss of market share if these patents are infringed.

Callaway also argues that Acushnet's Hebert patent is relevant to this dispute.⁷ It is hard to see how the Hebert patent is even remotely relevant to the validity of the patents-in-suit. The Hebert patent claims are narrower than the patents-in-suit and relate to different technology including an outer cover made of "castable reactive liquid material" and an "inner cover layer of a flexural modulus of at least about 65,000." (Ex. I

⁶ This is not necessarily true, as the PTO has the ability to issue "requirements for information" in reexamination proceedings under 37 C.F.R. § 1.105. *See* 37 C.F.R. § 1.105(a)(1). Therefore, the PTO has the ability to exercise a form of discovery contrary to Callaway's assertions.

⁷ Callaway also asserts that the Hebert patent was filed three years after the filing of the patents-in-suit. However, the PTO concluded, the patents-in-suit are not entitled to the June 1993 filing date Callaway now claims. (*See* Exs. A-D to Acushnet's Mot. to Stay.)

to Callaway Opp. at col. 9, lines 2-10.) At least because of these notable differences in the claims of the Hebert patent and the patents-in-suit, Callaway's argument that an unrelated Acushnet patent is relevant to this matter is wrong as well.

V. **REQUIRING THE PARTIES TO DUPLICATE EFFORTS IS WASTEFUL**

In this case, the *inter partes* reexamination of the patents-in-suit is substantial and highly complex and will require a significant amount of the parties' resources. Full evaluation of the prior art, preparing evidence for submission to the PTO in declaration form, and analyzing and responding to what have traditionally been substantial PTO office actions and Patent Owner responses will be an expensive and time-consuming process.

Although litigation and reexamination are different proceedings each of which follows a different procedure, there will undoubtedly be massive duplication of efforts if the federal court proceeding goes forward. It is likely that each of Callaway's claims will be cancelled during the reexamination proceeding, resolving the entire dispute. Even if the claims are not cancelled in their entirety, Callaway's claims will be amended during the reexamination, giving Acushnet intervening rights and changing issues relating to claim construction, infringement and non-infringement and estoppel. Thus, there are substantial efficiencies to be gained by staying litigation and permitting the PTO to resolve the substantial new questions of patentability raised by Acushnet's requests for reexamination.⁸

⁸ If the PTO confirms Callaway's claims, as Callaway believes it will, then the reexamination proceeding will be over much more quickly than the numerous proceedings relied on in Callaway's quasi-empirical research. Moreover, the data presented by Callaway distorts the likely pendency time for the *inter partes* reexamination due to new initiatives by the PTO to reduce the pendency of such proceedings. (Ex. E (USPTO Pat. Public Advisory Comm. Rep., Nov. 30, 2005) at 10-11.)

CONCLUSION

For the foregoing reasons, Acushnet respectfully requests this Court grant its Motion to Stay Litigation Pending *Inter Partes* Reexamination by the U.S. Patent Office.

Respectfully submitted,

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**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

CERTIFICATE OF SERVICE

I, David E. Moore, hereby certify that on May 30, 2006, the attached document was hand delivered to the following persons and was electronically filed with the Clerk of the Court using CM/ECF which will send notification of such filing(s) to the following and the document is available for viewing and downloading from CM/ECF.

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EXHIBIT A

EXHIBIT A

TO

**ACUSHNET COMPANY'S REPLY
MEMORANDUM IN SUPPORT OF ITS
MOTION TO STAY LITIGATION
PENDING INTER PARTES
REEXAMINATION BY THE U.S. PATENT
OFFICE**

SEE

**NOTICE OF PAPER FILING WITH
CLERK'S OFFICE**

EXHIBIT B

Part I

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re U.S. Patent No.: **6,210,293**

Inventor: Michael J. SULLIVAN

Issued: April 3, 2001

Appl. 09/470,196

Filed: December 21, 1999

Titled: **MULTI-LAYER GOLF BALL**

**REQUEST FOR REEXAMINATION
UNDER 35 U.S.C. §§ 301-307, 314 AND
37 C.F.R. §§1.913-1.914**

BOX REEXAM

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Alexandria, VA 22313-1450

**REQUEST FOR *INTER PARTES* REEXAMINATION OF
U.S. PATENT NO. 6,210,293**

Sir:

Inter partes reexamination is hereby respectfully requested, pursuant to 35 U.S.C. §§ 301-307, 314 and 37 C.F.R. §§1.913-1.914 of United States Patent No. 6,210,293 ("the '293 patent"), which issued on April 3, 2001 to Michael J. Sullivan. The '293 patent is assigned to Callaway Golf Company and a copy is attached hereto as **Exhibit A**. The filing date was December 19, 1999 and therefore the '293 patent is eligible for *inter partes* reexamination. This request is filed within the period of enforceability as required by 37 C.F.R. § 1.913. The party requesting this *inter partes* reexamination proceeding is not subject to the estoppel provisions of 37 C.F.R. § 1.907. This request is accompanied by the fee for requesting *inter partes* reexamination set in 37 C.F.R. § 1.20(c)(2). The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 08-3038 referencing docket number **00634.0004.RXUS01**.

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I. INTRODUCTION AND OVERVIEW

The references cited herein raise substantial new questions of patentability that render the issued claims in the '293 patent invalid.

The '293 patent claims a golf ball with a two-piece cover comprising a relatively hard inner cover layer and a polyurethane outer cover layer. This two-piece cover construction was well known in the art since the 1980s, as shown by references such as Nesbitt, discussed herein.

The '293 patent has an effective filing date of, at best, November 9, 1995. It is part of a large group of related applications. To distinguish his claims from the prior art, the Applicant in this family sought to add limitations to various material properties such as hardness, flexural modulus, thickness, and other parameters of golf ball cover layers. But, the '293 patent claims cover layer properties that were inherent in the prior art or intrinsic to golf ball cover layers. As a result, the claims of the '293 patent are anticipated under §102(b) and/or are obvious under §103(a) in view of the prior art references cited herein.

Callaway is also the owner of certain other patents which have claims that are substantially similar to the claims of the '293 patent. These patents include United States Patent No. 6,503,156, United States Patent No. 6,506,130 and United States Patent No. 6,595,873. Acushnet has contemporaneously filed requests for reexamination of these patents as well.

The request raises substantial new questions of patentability not previously considered by the PTO; indeed, the request demonstrates that the issued claims of the '293 patent are invalid. For the reasons discussed herein, and pursuant to MPEP §§ 2600 *et seq.*, *inter partes* reexamination of each claim of the '293 patent on the merits is proper.

II. CLAIMS FOR WHICH *INTER PARTES* REEXAMINATION IS REQUESTED

Inter partes reexamination is requested for all claims (1-8) of the '293 patent.

Claims 1, 4 and 7 are the independent claims. Claim 1 recites specific features of a multi-layer golf ball including an inner cover layer made of a blend of two low-acid ionomer resins

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resulting in an inner cover layer having a prescribed Shore D hardness and thickness as well as an outer cover layer made of "relatively soft" polyurethane material and having a prescribed Shore D hardness and thickness. Claims 2 and 3 depend directly from claim 1 and further limit the diameter of the golf ball and the thicknesses of the various cover layers.

Claim 4, like claim 1, is limited to a multi-layer golf ball including a low-acid ionomer inner cover layer having a prescribed Shore D hardness and flexural modulus and an outer cover layer made of a polyurethane material having a prescribed Shore D hardness. Moreover, claim 4 requires that the golf ball have dimples. Claims 5 and 6 depend from claim 4 and further limit the thickness of the inner and outer cover layers.

Claim 7 is also limited to a multi-layer golf ball including a low-acid ionomer inner cover layer having a prescribed Shore D hardness and flexural modulus and an outer cover layer made of a polyurethane material having a prescribed Shore D hardness and flexural modulus. Claim 7, like claim 4, is also limited to a golf ball that includes dimples. Claim 8 depends from claim 7 and further requires that the inner cover layer be harder than the outer cover layer.

III. REFERENCES THAT FORM THE BASIS FOR THE REQUEST FOR REEXAMINATION

A. References that Raise Substantial New Questions of Patentability

~~The following table sets forth the references relied upon in this Request for *inter partes*~~
Reexamination. Each of the cited references is prior art to the '293 patent based on its respective date under 35 U.S.C. § 102(b), as set forth below.

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Reexam Claim Numbers	References Applied Against Claims of the '293 Patent
1-8	Anticipated by United States Patent No. 4,431,193 to R. Dennis Nesbitt ("Nesbitt") (issued Feb. 14, 1984) under 35 U.S.C. § 102(b).
1-8	Obvious over Nesbitt in view of United States Patent No. 4,274,637 to Robert P. Molitor ("Molitor '637") (issued Jun. 23, 1981) under 35 U.S.C. § 103(a).
1-8	Obvious over Nesbitt in view of United States Patent No. 5,334,673 to Shenshen Wu ("Wu") (issued Aug. 2, 1994) under 35 U.S.C. § 103(a).
1-8	Obvious over Nesbitt in view of United States Patent No. 4,674,751 to Robert P. Molitor ("Molitor '751") (issued Jun. 23, 1987) under 35 U.S.C. § 103(a).
1-8	Obvious over United States Patent No. 5,314,187 to James R. Proudfit ("Proudfit") (issued May 24, 1994) in view of Molitor '637 under 35 U.S.C. § 103(a).
1-8	Obvious over Proudfit in view of Wu under 35 U.S.C. § 103(a).
1-8	Obvious over Proudfit in view of Molitor '751 under 35 U.S.C. § 103(a).

Only the Nesbitt and Proudfit patents referenced above were cited during the prosecution of the '293 patent. Molitor '637 was cited against the claims of the great-grandparent application in the '293 patent family, U.S. Patent Application Serial No. 08/070,510.¹ However, the inherent properties of the soft polyurethane disclosed in Molitor '637, relied on herein, were not before the Examiner. The Proudfit patent was originally cited by the examiner in the parent application

to the '293 patent, U.S. Patent Application Serial No. 08/870,585.² However, as we will show

¹ Nesbitt was cited by Examiner Graham in an office action dated April 8, 1994. In this office action, Examiner Graham found that the combination of Nesbitt with United States Patent No. 5,068,151 to Nakamura rendered the claims obvious under 35 U.S.C. § 103(a). This rejection was repeated in the grandparent application to the '293 patent, U.S. Patent Application Serial No. 08/556,237 in office actions mailed February 8, 1996 and December 6, 1996.

² Proudfit was cited by Examiner Graham in an office action dated July 8, 1998. In U.S. Pat. App. Serial No. 08/070,510. In this office action, Examiner Graham found that the Proudfit patent rendered the claims obvious under 35 U.S.C. § 103(a). This rejection was repeated in an office action dated December 21, 1998. This rejection was mistakenly withdrawn due to a declaration under 37 C.F.R. § 1.131 that was submitted in copending U.S.

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herein, Proudfit, prior art to the claims of the '293 patent under § 102(b), was improperly removed in a prior application using an inappropriate Rule 131 declaration.

B. Summary of the Substantial New Questions of Patentability

In summary this request raises at least the following substantial new questions of patentability that were not previously considered by the PTO: (1) Nesbitt's incorporation by reference of Molitor '637 anticipates all claims of the '293 patent; (2) inherent properties of Molitor '637's Estane polyurethane were not before the Examiner and hence not considered; (3) Proudfit was improperly antedated in a previous application although it anticipates and/or renders obvious all claims of the '293 patent; (4) Proudfit also has inner and outer cover layers that have inherent properties not previously before the PTO; (5) the inherent properties of Wu's polyurethane were not previously considered by the PTO; and (6) the Shore D hardness of Molitor '751 was not before the PTO. Because numerous properties recited in the claims were inherently present in the references and not previously considered by the PTO these references raise substantial new questions of patentability and reexamination is proper.

None of the arguments herein were considered before by the PTO during prosecution of the '293 patent. The inherent properties of the soft polyurethane outer cover layer materials in various references were not before the PTO during the original prosecution of this application. This request raises several substantial new questions of patentability with respect to the claims of the '293 patent. Indeed, each of the claims of the '293 patent is invalid.

Application Serial No. 08/926,246. As will be explained in further detail herein, because the great-grandparent application (the '510 application) did not enable or describe a low-acid ionomer, which is an essential part of each and every claim of the '293 patent, Proudfit qualifies as 102(b) prior art and cannot be sworn behind. *See* M.P.E.P. § 715 (stating that Rule 1.131 declarations are inappropriate where "the reference publication date is more than 1 year prior to applicant's or patent owner's effective filing date.")

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IV. BACKGROUND TO THE '293 PATENT

A. Summary of the Relevant Disclosure of the '293 Patent

The '293 patent is directed towards a multi-layer golf ball including a hard ionomer inner cover layer and a soft polyurethane outer cover layer. Figure 1 of the '293 patent showing the multi-layer golf ball is reproduced below. According to the '293 patent, golf balls including hard, low acid (i.e., less than 16% acid) ionomeric inner cover layers and soft polyurethane outer cover layers "provide[] for enhanced distance without sacrificing playability or durability when compared to known multi-layer golf balls." ('293 patent, Abstract.)

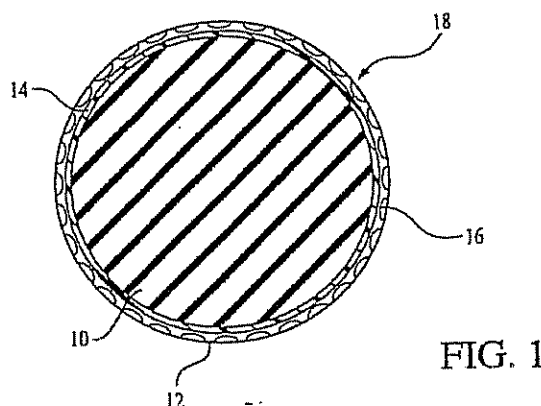


FIG. 1

The '293 patent discloses an inner cover layer that comprises a blend of low acid ionomer resins resulting in an inner cover layer having a Shore D hardness³ of 60 or greater and an outer cover layer made of polyurethane resulting in an outer cover layer having a preferred Shore D hardness of about 45. (~~'293 patent, col. 3, lines 49-53.~~) ~~All claims of the '293 patent require that~~ the outer layer be made using a polyurethane material. However, the '293 patent also discloses that blends of low acid ionomers used as the outer cover can provide similar benefits to polyurethane outer covers (i.e., they "provide[] for enhanced feel, and playability characteristics

³ "Shore D hardness is a measure of the resistance of a material to indentation. The higher the Shore D number, the greater the resistance to indentation." ENGINEERED MATERIALS HANDBOOK, VOL. 2 at 38. In measuring Shore D hardness, a Shore D durometer is used.

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typically associated with balata or balata-blend balls.”) (’293 patent, col. 6, lines 56-62.) Thus, the Applicant himself recognized the substitutability of soft ionomers or ionomer blends for soft polyurethane material.

The golf ball described in the ’293 patent includes inner and outer covers that can have certain material properties including flexural modulus⁴ characteristics. For example, according to one embodiment disclosed in the ’293 patent, the outer cover layer may include a blend of low-acid ionomers and may have a flexural modulus of between 1,000 and 10,000 psi. (’293 patent, col. 11, lines 11-15.) Additionally, the ’293 patent specification defines a high modulus ionomer as an ionomer having a flexural modulus between 15,000 and 70,000 psi. (’293 patent, col. 7, lines 16-19.) The ’293 patent specification does not describe a polyurethane outer cover having a modulus of between 1,000 and 30,000 psi.⁵ (’293 patent, col. 7, lines 16-20.)

The golf ball inner and outer cover layers may have certain prescribed cover thicknesses. For example, the ’293 patent discloses that the outer cover layer can have a thickness of between about 0.010 inches to about 0.050 inches and that the inner cover layer can have a thickness of between about 0.100 inches to about 0.010 inches to produce a golf ball having a diameter of 1.680 inches or more. (’293 patent, col. 14, lines 37-46.)

B. Ordinary Skill in the Art

Those of ordinary skill in the art at the time of the alleged invention had a number of years of experience in golf ball design. The person of ordinary skill in the art would recognize that playability properties, such as the ability to impart spin or draw on the golf ball, are important features for skilled professional or low handicap golfers. Additionally, this person

⁴ Flexural modulus is a ratio of stress to strain when the material being tested is being flexed. ENGINEERED MATERIALS HANDBOOK, VOL. 2 (ENGINEERING PLASTICS) 18 (1988).

⁵ The first time that subject matter regarding polyurethane material having a modulus between 1,000 and 30,000 psi was presented was in original claim 6 of U.S. Patent Application Serial No. 08/556,237 filed on November 9, 1995.

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would realize that a soft outer cover layer over a hard inner layer would produce a golf ball that had good playability properties and would be resilient as well. (See United States Patent No. 5,150,906, col. 10, lines 28-39 (**Exhibit H**.) This person would also recognize that the mechanical properties of the materials—rather than the particular materials themselves—played an important role in designing a golf ball having properties acceptable for a professional or low handicap golfer.

One of ordinary skill in the art would find themselves bound by the U.S.G.A. rules of golf as defining limits for various properties of a golf ball. (See M.J. Sullivan & T. Melvin, “The relationship between golf ball construction and performance,” from Science and Golf II: Proceedings of the World Scientific Congress of Golf (1994) (**Exhibit G**.) Additionally, due to the minimal amount of technical literature published on golf ball design, those of ordinary skill in the art would be aware of the teachings of prior art patents.

C. Prior Art Golf Balls

For many years, golf balls included wound cores and were covered by balata, a natural rubber that comes from trees in South America. In fact, prior to 1994, the PGA tour was dominated by balata golf balls. Balata, however, had a number of drawbacks. Balata covered golf balls were expensive to manufacture and were also easily cut or damaged when struck by a golf club.

Therefore, at least as early as the 1960's—well before the filing of the '510 application—golf ball manufacturers were looking for substitutes to balata. One exemplary class of materials found to be substitutable for balata was the ionomer resin. One example of an ionomer resin is the ionomer resin sold under the trade name Surlyn® by E.I. DuPont de Nemours. (See Nesbitt, col. 1, lines 9-19; Great Britain Application Publication 1 515 196 (“GB '196”), col. 1, lines 27-33 (**Exhibit B**.) However, Surlyn® resins were not acceptable to professional golfers because they lacked the “click” and “feel” of balata-covered golf balls. (GB '196, col. 1, lines 33-37;

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Wu, col. 1, lines 34-36.) These issues with Surlyn® covers were known to those skilled in the art at least as early as the 1970's. The deficiencies associated with ionomer resin covers led those skilled in the art to pursue other materials for golf ball covers—including polyurethane.

1. Polyurethane Has Been a Well-Known Outer Cover Material for Golf Balls Since at Least the Early 1960's

In 1993, Acushnet revolutionized golf ball cover materials and introduced its Titleist Professional™ golf ball that included a soft polyurethane outer cover layer. By 1994, over one year before the effective filing date of the claims of the '293 patent, the Titleist Professional™ golf ball was the #1 golf ball on the PGA Tour. The polyurethane used in the Titleist Professional™ golf ball is described in the Wu patent. (Exhibit C (showing that the Titleist Professional™ golf ball used the outer cover layer material taught by Wu by patent markings); see also Decl. of Jeffrey L. Dalton at ¶¶ 3-4.)

The inventor himself co-authored an article in the late 1990's that discusses Robert Molitor's urethane covered golf balls that were patented and sold as the "Executive" and "Executive II" golf balls in the late 1960's and early 1970's. Science and Golf III: Proceedings of the 1998 World Scientific Congress of Golf, "History and Construction of Non-Wound Golf Balls," at 409 (1999) (Exhibit D.) In this article, Mr. Sullivan stated that "polyurethanes have been used in golf balls for decades and offer good resilience, excellent abrasion resistance, and reasonable ease of molding." (*Id.* at 413.) Thus, Mr. Sullivan himself saw the evolution of the polyurethane cover beginning well before the critical date.

One Acushnet publication, GB '196, published June 21, 1978, teaches that polyurethane is a good substitute for balata:

One cover material which has been looked at as a substitute for balata or Surlyn resin is polyurethane. The great advantage to polyurethane is that it combines relatively low price with the good cut resistance of Surlyn resin and the good click and feel of Balata.

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(GB '196 at col. 1, lines 38-44 (**Exhibit B**)). Other patents also recognized benefits of using polyurethane as an outer cover for a golf ball including, for example, increased durability. For example, GB 869,490, published May 31, 1961, taught:

It has been discovered that liquid urethane polymers are admirably suited for use as a golf ball cover material [because] when applied to a golf ball center as hereinafter described form a strong, though, resilient cover which is highly resistant to damage when the ball is struck by a golf club.

(Great Britain Application Publication 869,490 ("GB '490"), p.2, col. 1, lines 21-31 (**Exhibit E**)). Additionally, U.S. Patent No. 3,112,521, issued on December 3, 1963 taught that, in addition to durability, some polyurethanes yielded manufacturing advantages as well:

It has recently been proposed to use urethane polymers as materials for covering golf balls. Such materials have substantial advantages in that they provide a cover which is extremely tough and highly resistant to cutting or other damage in use. In addition, liquid urethane polymers offer manufacturing advantages because such polymers may be applied, set and cured at normal room temperatures

(U.S. Patent No. 3,112,521, col. 1, lines 24-32 (**Exhibit F**)).

One of ordinary skill in the art would have realized that a soft polyurethane material was substitutable for both balata and ionomer resins as outer cover layer materials for golf balls before the effective filing date of November 9, 1995. Moreover, those of ordinary skill in the art ~~at the time of invention would have appreciated the advantages of polyurethane outer covers for~~ golf balls. This is particularly true given the fact that the Titleist Professional™ had become the #1 ball on the PGA Tour in 1994, well before the effective filing date of the claims.

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2. Golf Balls having Relatively Hard Inner Covers and Relatively Soft Outer Covers as Claimed in the '293 Patent were Well Known in the Art Prior to the Alleged Date of Invention

At least one golf ball including a hard, high modulus inner cover layer and a relatively soft, low modulus outer cover layer was introduced by Wilson Sporting Goods Co. in 1993 when Wilson released its Wilson Ultra Tour Balata golf ball. This golf ball included a solid core, an inner cover layer including a blend of low-acid ionomers and a synthetic balata outer cover layer material including a thermosetting polymeric material. This golf ball is described in the Proudfit patent which will be discussed in detail below. As discussed above, however, the Wilson Ultra Tour Balata ball included a 'balata' cover material, which was quickly becoming obsolete in late 1993 and early 1994.

Additionally, golf balls including a relatively hard, high modulus inner cover layer and a relatively soft, low modulus outer cover layer were disclosed by Nesbitt '193. Nesbitt teaches that a golf ball having a hard inner cover layer and soft outer cover layer, as described above, exhibit an improved coefficient of restitution and gives a "feel" similar to that of balata. (Nesbitt, col. 1, line 65-col. 2, line 9.) In fact, Nesbitt specifically incorporates the polymeric materials disclosed in Molitor '637, which include a specific grade of Estane-brand thermoplastic polyurethane as outer cover materials that are to be used with Nesbitt's golf ball. (Nesbitt, col. 3, lines 56-61; Molitor '637, col. 18, Examples 16-18.)

Molitor '751 also teaches that in referring to two-piece golf balls, the term "two-piece golf ball" is intended to include golf balls with separate solid layers under the cover such as the golf balls disclosed by Nesbitt. (Molitor '751, col. 3, lines 7-12.) Additionally, Proudfit also taught golf balls including a hard ionomeric inner cover layer and a relatively soft non-ionomeric outer cover layer. (Proudfit, col. 1, lines 11-16.)

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Those skilled in the art knew that golf balls including a hard, high-modulus inner cover layer and a soft, low-modulus outer cover layer provided a durable golf ball that exhibited properties similar to a balata-covered golf ball.

3. Golf Ball Designers Knew that the Selection of the Type of Materials for Inner and Outer Cover Layers was Dictated Primarily by the Mechanical Properties of the Materials

As the inventor of the '293 patent admitted in 1994, particular materials used in the construction of the golf ball did not matter as much as the mechanical properties of those materials. Particularly, Mr. Sullivan wrote:

Construction (i.e., simply wound versus 2-piece) no longer dictates performance. The critical design parameters are not whether the core is wound, solid, liquid filled, or balata or Surlyn covered but rather the hardness, thickness, and dynamic mechanical properties of the cover, the flexural properties of the ball, and size of the ball.

Science and Golf II: Proceedings of the World Scientific Congress of Golf, "The relationship between golf ball construction and performance," 334-39 (1994) (emphasis added) (**Exhibit G.**) That materials could be selected based more on the material properties (e.g. Shore hardness and modulus) was also recognized well before the filing date by Molitor. In a United States Patent filed March 10, 1989, Molitor taught:

~~By fabricating the shell as a multi-layer laminate, its materials~~
can be selected for tailoring the performance of the ball to a particular use or application. For example, the properties such as color, frictional bite, durability, and resistant to scuffs and cuts could be built into the outer layer. The inner layer could simply provide the desired resilience. **Further, the interior layer could be of a relatively high modulus of elasticity for increased life and resilience while the external layer could be formed of a lower modulus of elasticity for greater frictional contact with the ball striking surface of the golf club for greater bite and playability.**

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(United States Patent No. 5,150,906 to Molitor ("Molitor '906") at col. 10, lines 28-39 (emphasis added) (**Exhibit H**)). Thus, based on these teachings, those skilled in the art of golf ball design in the early 1990's would have appreciated how to select materials for their mechanical properties for the various cover layer on multi-piece golf balls.

As set forth below, all of the features of the claims of the '293 patent were known in the prior art prior to the critical date of the claims of the '293 patent. Therefore reexamination of the claims of the '293 patent is appropriate.

V. PROSECUTION HISTORY OF THE '293 PATENT

The application for the '293 patent was filed on December 21, 1999 and claims priority to a number of applications, each of which have gone abandoned. The application for the '293 patent is allegedly a continuation of U.S. Patent Application No. 08/870,585 filed on June 6, 1997 ("585 application" or "parent") and is allegedly a continuation of U.S. Patent Application No. 08/556,237 filed November 9, 1995 ("237 application" or "grandparent") and is a continuation-in-part application of U.S. Patent Application No. 08/070,510 filed June 1, 1993 ("510 application" or "great-grandparent").

The claims of the '293 application are, at best, only entitled to the filing date of the '237 application (November 9, 1995) because the '510 patent failed to enable or describe a golf ball including the claimed low-acid inner cover layer. Therefore, the effective filing date of the claims of the '293 patent can only be as early as November 9, 1995. Therefore, the § 102(b) critical date is November 9, 1994.

The application for the '293 patent was filed with a preliminary amendment that cancelled the original, broader claims and replaced those claims with claims that required that the outer cover layer be made of a polyurethane material. In the first office action, Examiner Gorden rejected the claims for obviousness-type double patenting over the claims pending in the parent

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application. (Office Action re-mailed June 26, 2000.) The claims of the '293 patent were not rejected under any one of the references discussed in detail in this reexamination request. Therefore, each of the references presented herein raise substantial new questions as to the patentability of the claims of the '293 patent.

VI. APPLICATION OF THE PRIOR ART TO THE CLAIMS OF THE '293 PATENT

The '293 patent includes 8 claims, including independent claims 1, 4, and 7.

A. Claim 1

Claim 1 of the '293 patent is an independent claim directed to "a golf ball" including a relatively hard, low acid ionomeric inner cover layer having a defined thickness and a relatively soft, outer cover layer including a polyurethane material also having a defined thickness. The golf ball as recited in claim 1 includes:

- (a) "a core;"
 - (b) "an inner cover layer having ..."
 - a. "a Shore D hardness of 60 or more molded on said core,"
 - b. "said inner cover layer having a thickness of 0.100 to 0.010 inches,"
 - c. "said inner cover layer comprising a blend of two or more low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid; and"
-
- (c) "an outer cover layer having ..."
 - a. "a Shore D hardness of 64 or less molded on said inner cover layer,"
 - b. "said outer cover layer having a thickness of 0.010 to 0.070 inches, and"
 - c. "said outer cover layer comprising a relatively soft polyurethane material."

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The golf ball defined by claim 1 was far from novel, well before November 9, 1995. Golf balls including each and every element recited in claim 1 were taught and/or rendered obvious by prior art patents prior to the effective filing date of the claims of the '293 patent.

1. Claim 1 is anticipated by Nesbitt or in the Alternative, is Obvious Over Nesbitt in view of Molitor '637

Nesbitt discloses a golf ball including "an inner layer 14 of hard, high flexural modulus resinous material" and an "outer layer or cover 16 of soft, low flexural modulus resin." (Nesbitt, col. 1, lines 20-25.) Nesbitt issued on February 14, 1984 and is therefore prior art to the claims of the '293 patent under 35 U.S.C. § 102(b).

One example disclosed in Nesbitt includes a hard inner cover layer of Surlyn® 1605 and a soft outer cover layer of Surlyn® 1855. Surlyn® 1605, which has been redesignated as Surlyn® 8940, has a Shore D hardness of 65 or 66. (See **Exhibit I** (Product Information Sheet for Surlyn®); see also '293 patent, Table 1.) Surlyn® 1855, now designated as Surlyn® 9020, has a Shore D hardness of 55. (**Exhibit I**.) Nesbitt makes clear, however, that these cover materials are merely exemplary. (Nesbitt, col. 2, lines 37, 45 (stating that materials "such as" Surlyn® resins may be used); col. 3, lines 21, 25 (same).)

As a further indication that Nesbitt's disclosure was not limited to the use of Surlyn® ionomers, Nesbitt incorporates the "polymeric materials" taught by the Molitor '637 patent by reference.⁶ (Nesbitt, col. 3, lines 56-61.) Molitor '637 teaches a limited number of polymeric materials for outer cover layers of golf balls, including polyurethane. (Molitor '637, col. 5, lines

⁶ Where a prior art reference makes specific reference to an aspect of a second prior art reference, the second reference is to be treated as part of the disclosure of the first reference. See *Telemac Cellular Corp. v. Topp Telecom, Inc.*, 247 F.3d 1316, 1329 (Fed. Cir. 2001). Moreover, the words "incorporate by reference" are not required to incorporate a second reference into the first reference. See *In re Fried*, 329 F.2d 323 (CCPA 1964) (finding that the following statement to be an effective incorporation by reference: "The [...] steroid reactants can be prepared as disclosed in the applications of Josef Fried, Serial Nos. 489,769 and 515,917, filed February 21, 1955, and June 24, 1955, respectively.")

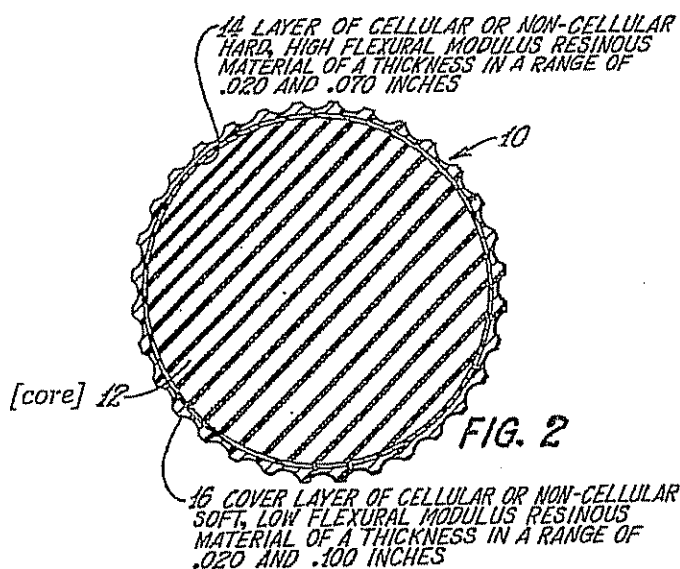
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33-55; cols. 18-19, examples 16-19.) Therefore, Molitor's polyurethane is incorporated by reference into Nesbitt as an outer cover layer as if it were part of Nesbitt's original disclosure.

Figure 1 from the Nesbitt patent shows the various layers of the multi-piece golf ball taught by Nesbitt:



Claim 1:	Nesbitt
A golf ball comprising:	"The disclosure embraces a golf ball and method of making same" (Nesbitt, Abstract; FIGS 1 & 2.)
a core;	"Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a solid center or core formed as a solid body of resilient polymeric material or rubber-like material in the shape of a sphere." (Nesbitt, col. 2, lines 31-34.)
an inner cover layer having ...	"Disposed on the spherical center or core 12 is a first layer, lamination, ply or inner cover 14 of molded hard, highly flexural modulus resinous material...." (Nesbitt, col. 2, lines 34-37.)
a Shore D hardness of 60 or more molded on said core,	<u>Nesbitt</u> : "[I]nner cover 14 of molded hard , high flexural modulus resinous material such as type 1605 Surlyn® marketed by E.I DuPont de Nemours ." (Nesbitt, col. 2, lines 36-38.) <u>Per the '293 Patent</u> : "Type 1605 Surlyn® (now designated Surlyn® 8940)." ('293 patent, col. 2, lines 54-55.)

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Claim 1	Nesbitt
	DuPont Surlyn® Product Information: ⁷ Surlyn® 8940 (formerly Surlyn® 1605) has a Shore D hardness of 65.
said inner cover layer having a thickness of 0.100 to 0.010 inches,	"It is found that the inner layer of hard, high flexural modulus resinous material such as Surlyn® resin type 1605, is preferably of a thickness in a range of 0.020 inches and 0.070 inches." (col. 3, lines 19-23.)
said inner cover layer comprising a blend of two or more low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid; and	Nesbitt Incorporates the Materials of Molitor '637 by Reference: "Reference is made to the application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers 14 ... for the golf ball of this invention." (Nesbitt, col. 3, lines 54-60.) Molitor '637: Molitor teaches, in examples 1-7, cover materials including a blend of two ionomer resins: Surlyn 1605 and Surlyn 1557. (Molitor '637, col. 14, line 22 to col. 16, line 34.)
an outer cover layer having ...	"An outer layer, ply, lamination or cover 16 ... is then remolded onto the inner ply or layer 14...." (col. 2, lines 43-47.)
a Shore D hardness of 64 or less molded on said inner cover layer,	Nesbitt: Nesbitt teaches an outer cover layer made of Surlyn® 1855 (now Surlyn® 9020) that has a Shore D hardness of 55. ⁸ Nesbitt Incorporates the Materials of Molitor '637 by Reference: "Reference is made to the application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention." (Nesbitt, col. 3, lines 54-60.) Molitor '637: Teaches the use of Estane 58133 in Examples 16 and 17. (Molitor '637, col. 18.) Estane is a soft polyurethane material that inherently has a Shore D hardness of 55. ⁹
said outer cover layer having a thickness of 0.010	"The thickness of the outer layer or cover 16 of soft, low flexural modulus resin such as Surlyn type 1855, may be in the

⁷ See Exhibit I.⁸ See Exhibit I.⁹ See Exhibit J (Estane 58133 Product Specification Sheet).

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Claim 1	Nesbitt
to 0.070 inches, and	range of 0.020 inches and 0.100 inches." (Nesbitt, col. 3, lines 22-25.)
said outer cover layer comprising a relatively soft polyurethane material.	<u>Molitor '637</u> : Estane 58133 is a relatively soft" polyurethane material. (Molitor '637, col. 18.)

Therefore, Nesbitt anticipates claim 1 because: (1) Nesbitt incorporates the relatively soft Estane 58133 polyurethane of Molitor '637 and (2) the Estane 58133 polyurethane material inherently has a Shore D hardness of 55, well within the claimed range. *See* M.P.E.P. §§ 2163.07 (incorporation by reference permitted); 2131.01 (multiple reference § 102 rejection appropriate when showing aspect of another reference is inherent).

Additionally the alleged invention recited in claim 1 would have been obvious to those skilled in the art at the time of the alleged invention. For example, Nesbitt provides express motivation to incorporate the soft polyurethane material disclosed in Molitor '637 as the soft outer cover layer by its specific reference to the Molitor '637 "polymeric materials." (Nesbitt, col. 3, lines 51-61.) Prior to the alleged invention, polyurethane was known to have a number of advantageous properties for use in golf ball covers. (*See, e.g.*, GB '196 at col. 1, lines 38-44 (**Exhibit B**); *supra* IV.C.1.)

Moreover, as recognized by the inventor himself, the particular materials used in the golf balls were not as important as the mechanical properties of those layers. (*See Exhibit G* at 334.)

~~Furthermore, the relatively soft polyurethane material taught by Molitor '637 and the relatively~~
 soft ionomer inner cover layer taught by Nesbitt have similar mechanical properties including an identical Shore D hardness of 55 and a similar, relatively low flexural modulus of 25,000 and 14,000 psi, respectively. (*Compare Exhibit I with Exhibit J.*) This would have further suggested to those skilled in the art that the soft polymeric materials taught by Molitor, including, for example, the relatively soft polyurethane material would have been substitutable for the soft ionomer outer cover layer in one example taught by Nesbitt.

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Accordingly, Nesbitt teaches every limitation of claim 1, and thereby anticipates claim 1 under 35 U.S.C. § 102(b) and/or renders claim 1 obvious under 35 U.S.C. § 103(a) when taken in view of Molitor '637. Therefore, Nesbitt and its incorporation of Molitor '637 raise substantial new questions of patentability with respect to claim 1 that were not previously considered by the PTO. Therefore, reexamination of claim 1 of the '293 patent is appropriate.

2. Claim 1 is obvious over Nesbitt in view of Wu

While Nesbitt discloses a particular soft, low modulus polyurethane material (i.e., Estane 58133) for use in a golf ball cover layer, it also would have been obvious to use the polyurethane taught by Wu (i.e., a relatively soft, low modulus material) as the outer cover layer of Nesbitt at the time of the alleged invention. In fact, in 1993, Wu's polyurethane was being used as the outer cover layer on what was to become the most-used golf ball on the PGA Tour—the Titleist Professional™ golf ball. (Decl. of Jeffrey L. Dalton at ¶¶ 3-4.)

Nesbitt teaches a multi-layer golf ball having a soft, low modulus polymeric outer cover layer.

Wu teaches that:

The problem with SURLYN®-covered golf balls, however, is that they lack the "click" and "feel" which golfers had become accustomed to with balata. "Click" is the sound when the ball is hit by a golf club and "feel" is the overall sensation imparted to the golfer when the ball is hit.

It has been proposed to employ polyurethane as a cover stock for golf balls because, like SURLYN®, it has a relatively low price compared to balata and provides superior cut resistance over balata. However, unlike SURLYN®-covered golf balls, polyurethane-covered golf balls can be made to have the "click" and "feel" of balata.

(Wu at col. 1, lines 36-46 (emphasis added).)

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Therefore, it would have been obvious to modify the golf ball disclosed in Nesbitt to include an outer cover layer made of Wu's soft polyurethane material because it has similar mechanical properties as Nesbitt's exemplary outer cover layer materials, while providing a golf ball having the "click" and "feel" of a balata-covered ball. This rationale was adopted by the BPAI in a related application in affirming an Examiner's rejection of a similar claim. The BPAI held:

In applying the test for obviousness⁶ we conclude that the teachings of Wu clearly would have made it obvious at the time the invention was made to a person of ordinary skill in the art to have modified Nesbitt's golf ball by using polyurethane as the outer cover material to achieve the expected benefits therefrom taught by Wu (i.e., to have the "click" and "feel" of balata; improved shear resistance and cut resistance; durability; and resiliency). Thus, it would have been obvious to one skilled in the art to have modified Nesbitt's three-piece golf ball having a spherical core, an inner layer of type 1605 Surlyn® and an outer layer of type 1855 Surlyn® by replacing the type 1855 Surlyn® in the outer layer with polyurethane as suggested and taught by Wu.

(*Ex Parte Sullivan*, PTO Bd. Of Patent App. & Int., Jan. 30, 2004 (decision in U.S. Patent Application Serial No. 08/873,594) (footnote omitted) (**Exhibit K**).)

Moreover, as recognized by the inventor himself, the particular materials used in the golf balls were not as important as the mechanical properties of those layers. (See **Exhibit G** at 334.)

Wu's polyurethane material has a Shore D hardness of 58 as measured on the surface of the golf ball. (**Exhibit C**.) Additionally, Wu's polyurethane has a flexural modulus of about 23,000 psi as measured according to ASTM standards. (See Decl. of Jeff Dalton at ¶ 7.) These properties were very similar to the hardness properties of the Surlyn® 1855 used in one example taught by Nesbitt, which has a flexural modulus of about 14,000 psi and a Shore D hardness of 55. Thus, those skilled in the art would have been led to substitute the soft, low modulus polyurethane of Wu for the soft, low modulus ionomer cover layer of Nesbitt because such would give the same

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or improved playability properties and would improve the durability properties of the resulting golf ball.

Therefore, it would have been obvious to modify the golf ball of Nesbitt to include the polyurethane disclosed by Wu because it provides a golf ball having an improved "click" and "feel" and exhibits improved cut and shear resistance when compared to balata- or ionomer-covered golf balls.

Thus, claim 1 is obvious under 35 U.S.C. § 103(a) over Nesbitt in view of Wu. Because these references raise substantial new questions of patentability that were not previously considered by the PTO, reexamination of claim 1 of the '293 patent is proper.

3. Claim 1 is Obvious over Nesbitt in view of Molitor '751

Claim 1 is also obvious under 35 U.S.C. § 103(a) over Nesbitt in view of Molitor '751. While Nesbitt describes the use of a soft outer cover layer including a polyurethane material (i.e., the Estane 58133 incorporated from Molitor '637), it also would have been obvious to include the relatively soft outer cover layer taught by Molitor '751 as the outer cover layer of the Nesbitt golf ball.

Molitor '751 teaches cover materials for use as outer cover layers in "two-piece" golf balls. Molitor '751 teaches that:

It has now been discovered that a key to manufacturing a two-piece ~~ball having playability properties similar to wound, balata-covered~~ balls is to provide about an inner resilient molded core **a cover having a shore C hardness less than 85**, preferably 70-80, and most preferably 72-76. The novel cover of the golf ball of the invention is made of a composition comprising a blend of (1) a **thermoplastic urethane** having a shore A hardness less than 95 and (2) an ionomer having a shore D hardness greater than 55.

(Molitor '751, col. 2, lines 33-49 (emphasis added).) In explaining what a "two-piece" golf ball is, Molitor '751 explains that:

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The phrase "two piece ball" as used herein refers primarily to balls consisting of a molded core and a cover, **but also includes balls having a solid layer beneath the cover as disclosed, for example, in U.S. Pat. No. 4,431,193 to Nesbitt, and other balls having non-wound cores.**

(Molitor '751, col. 2, lines 7-12 (emphasis added).) Molitor '751 explains that the advantages of using the cover including soft polyurethane material on a two-piece golf ball, such as the golf ball of Nesbitt, include "playability properties as good or better than balata-covered wound balls" resulting in golf balls that are significantly more durable, and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Molitor expresses the hardness of the cover as a Shore C hardness of less than 85, preferably 70 to 85 and most preferably 72 to 76. (Molitor '751, col. 4, lines 21-25.) Based on Callaway's own measurements, a Shore C hardness of 73 is equal to a Shore D hardness of 47. (See U.S. Patent No. 6,905,648, Table 19, **Exhibit L.**) Therefore, a cover having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 64.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the soft non-ionomeric polymeric outer cover layer incorporated Nesbitt and replace it with an outer cover layer made of the soft polyurethane material taught by Molitor '751 to provide a golf ball that includes "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Therefore, Nesbitt, when taken in view of Molitor '751 renders claim 1 obvious under 35 U.S.C. § 103(a). These references raise substantial new questions of patentability that were not previously considered by the PTO. Thus, reexamination of claim 1 of the '293 patent is proper.

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4. **Claim 1 is Obvious Over Proudfit in View of Molitor '637**

As discussed above, the effective filing date of the claims of the '293 patent, including claim 1, is November 9, 1995. Because Proudfit was published on May 24, 1994, more than one year prior to the effective filing date of the claims of the '293 patent, Proudfit is prior art under 35 U.S.C. § 102(b) and should not have been antedated with a Rule 1.131 declaration. *See* M.P.E.P. § 715. Prior to the Proudfit patent being improperly antedated, the Examiner had indicated that Proudfit taught all of the limitations of the claims except for a polyurethane material. (*See* '585 Application, Office Action, Paper No. 16 (Jul. 6, 1998).)

Proudfit discloses a three-piece solid golf ball that includes a core, a hard ionomer inner cover layer and a relatively soft outer cover layer made of a balata-based material. (Proudfit, Abstract; col. 5, lines 43-52.) Proudfit teaches that: "A number of golfers, primarily professional and low handicap golfers, prefer balata covered balls because of the higher spin rate, control, "feel," and "click" which balata provides." (Proudfit, col. 1, lines 49-52.) While Proudfit may not disclose the use of a polyurethane material in the outer cover it would have been obvious to modify Proudfit to include a relatively soft, low modulus outer cover including a polyurethane material rather than the balata disclosed therein. Moreover, polyurethane has advantages over both balata and Surlyn® as would have been readily appreciated by those skilled in the art prior to the critical date.

Proudfit's teachings are illustrated in the following claim chart:

Claim 1	Proudfit
A golf ball comprising:	"This invention relates to golf balls , and more particularly, to a golf ball having a two-layer cover." (col. 1, lines 11-12.)
a core;	"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (col. 7, lines 21-24.)

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Claim 1	Proudfit								
	<p>"Two specific solid core compositions used with the new two-layer cover had the composition described in Table 1. One core was used in a golf ball which was designated as a 90 compression ball, and the other core was used in a golf ball which was designated as a 100 compression ball." (col. 7, lines 51-55.)</p>								
an inner cover layer having ...	<p>"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (col. 7, lines 21-24.)</p>								
a Shore D hardness of 60 or more molded on said core,	<p>"The composition of the inner cover layer is described in Table 6."</p> <table border="1"> <caption>TABLE 6</caption> <thead> <tr> <th colspan="2">Composition of Inner Layer of Cover (Parts by Weight)</th> </tr> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> </thead> <tbody> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </tbody> </table> <p>(col. 8, lines 22-30.)</p> <p>Surlyn® 8940 has a Shore D hardness of 65; Surlyn® 9910 has a Shore D hardness of 64 (Exhibit I.) Therefore, this cover blend has a hardness of 60 or more.</p> <p>"The inner layer can be molded in one of two methods:</p> <ol style="list-style-type: none"> 1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core. 2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core." (col. 8, lines 32-38; <i>see also</i> Decl. of Edmund A. Hebert at ¶¶ 8-9.) 	Composition of Inner Layer of Cover (Parts by Weight)		Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Composition of Inner Layer of Cover (Parts by Weight)									
Ionomer Type	Blend Ratio								
Sodium- Surlyn 8940	75%								
Zinc- Surlyn 9910	25%								
said inner cover layer having a thickness of 0.100 to 0.010 inches,	<p>"The thickness of the inner layer can be within the range of about 0.0250 to 0.2875 inch to provide a total diameter of the inner layer and core within the range of about 1.550 to 1.590 inch." (col. 7, lines 37-40.)</p> <p>"The preferred dimensions are ... and inner layer thickness of 0.037 inch..." (col. 7, lines 43-44.)</p>								
said inner cover layer comprising a blend of two or more low acid ionomer resins containing no more than 16% by weight of an	<p>"The composition of the inner cover layer is described in Table 6."</p>								

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Claim 1	Proudfit								
alpha, beta-unsaturated carboxylic acid; and	<p style="text-align: center;">TABLE 6</p> <table border="1"> <thead> <tr> <th colspan="2">Composition of Inner Layer of Cover (Parts by Weight)</th></tr> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> </thead> <tbody> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </tbody> </table> <p>(col. 8, lines 22-30.) Surlyn® 8940 and Surlyn® 9910 are both low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid.</p>	Composition of Inner Layer of Cover (Parts by Weight)		Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Composition of Inner Layer of Cover (Parts by Weight)									
Ionomer Type	Blend Ratio								
Sodium- Surlyn 8940	75%								
Zinc- Surlyn 9910	25%								
an outer cover layer having ...	“FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material.” (col. 7, lines 21-24.)								
a Shore D hardness of 64 or less molded on said inner cover layer,	“... an outer layer of soft material such as balata or a blend of balata and other elastomers.” (col. 5, lines 15-17.) This material inherently has a Shore D hardness of less than 64. (See Decl. of Edmund A. Hebert at ¶ 7.)								
said outer cover layer having a thickness of 0.010 to 0.070 inches, and	“The thickness of the outer layer can be within the range of about 0.0450 to 0.0650 inch to provide a total ball diameter of 1.680 inch. The preferred dimensions are ... an outer layer thickness of 0.0525 inch...” (col. 7, lines 40-46.)								
said outer cover layer comprising a relatively soft polyurethane material.	“... an outer layer of soft material such as balata or a blend of balata and other elastomers.” (col. 5, lines 15-17.)								

While Proudfit may not expressly disclose the use of polyurethane as an outer cover material, it would have been obvious given that “[t]he patent literature is replete with proposed cover formulations seeking to improve upon the balata and ionomer covers [including] [p]olyurethane...” (Molitor '751, col. 2, lines 9-12.)

For example, Molitor '637 discloses the use of polyurethane material as a soft polymeric material that may be used as the outer cover layer of a golf ball. (See Molitor '637, col. 5, lines 33-41; col. 18, Examples 16 and 17.) One exemplary polyurethane material used by Molitor as an outer cover material is Estane 58133. (Molitor '637, col. 18.)

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Moreover, as recognized by the inventor himself, the particular materials used in the golf balls were not as important as the mechanical properties of those materials. (See **Exhibit G** at 334.) Because those skilled in the art would look to the mechanical properties of the materials when determining whether certain materials can be substituted for one another, those skilled in the art would recognize that the Estane polyurethane taught by Molitor '637 (having a flexural modulus of about 25,000 psi) and the polymeric outer cover layer material of Proudfit (which has a modulus of between 20,000 and 25,000 psi) would have been substitutable for one another. (Compare **Exhibit J** with Proudfit, col. 6, lines 28-31.) This would have further suggested to those skilled in the art that the soft polymeric materials taught by Molitor '637, including, for example, the relatively soft, low modulus polyurethane material of Molitor '637 would have been substitutable for the soft polymeric outer cover layer as taught by Proudfit.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the balata-based outer cover layer of Proudfit to include the polyurethane outer cover layer of Molitor '637 because polyurethane was a well known substitute to balata and gives a number of advantages over balata as would have been readily appreciated by those skilled in the art. These advantages include: (1) improved processability; (2) improved durability when compared to balata; (3) cost-effectiveness when compared to balata; and (4) having a good "click" and "feel." (See *supra* Part IV.C.1.) All of this would have led one of ordinary skill in the art to replace the soft, low modulus balata-based outer cover layer of Proudfit with the soft, low modulus polyurethane outer cover layer material of Molitor '637 at the time of the alleged invention.

Therefore, Proudfit when taken in view of Molitor '637 renders claim 1 obvious under 35 U.S.C. § 103(a). Because these references raise substantial new questions of patentability that were not previously considered by the PTO, reexamination of claim 1 of the '293 patent is proper.

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5. Claim 1 is Obvious Over Proudfit in View of Wu

As discussed above, Proudfit teaches a golf ball having a two-piece cover including a hard, ionomeric inner cover layer and a soft balata outer cover layer. While Proudfit may not disclose the use of a polyurethane material as the outer cover layer of a golf ball, it would have been obvious to one of ordinary skill in the art at the time of invention to replace the soft, low modulus balata-based outer cover layer of Proudfit with the soft, low modulus polyurethane material taught by Wu.

Wu teaches that:

The problem with SURLYN®-covered golf balls, however, is that they lack the "click" and "feel" which golfers had become accustomed to with balata. "Click" is the sound when the ball is hit by a golf club and "feel" is the overall sensation imparted to the golfer when the ball is hit.

It has been proposed to employ polyurethane as a cover stock for golf balls because, like SURLYN®, it has a relatively low price compared to balata and provides superior cut resistance over balata. However, unlike SURLYN®-covered golf balls, polyurethane-covered golf balls can be made to have the "click" and "feel" of balata.

(Wu at col. 1, lines 36-46 (emphasis added).)

As the inventor of the '293 patent had indicated in a 1994 publication, golf ball designers understood that the mechanical properties of the layers impacted the performance of the golf ball more than the materials themselves. (**Exhibit G** at 334.) Additionally, Wu's polyurethane material inherently has a flexural modulus of about 23,000 psi when tested according to ASTM standards. (Decl. of Jeffrey L. Dalton at 7.) Proudfit's outer cover layer material has a flexural modulus of between about 20,000 and 25,000 psi. (Proudfit, col. 6, lines 28-31.) Thus, one of ordinary skill in the art would have appreciated that using Wu's polyurethane as Proudfit's outer cover layer would have provided similar playability characteristics as well as numerous advantages including, for example, durability.

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Based on Wu's teachings, one of ordinary skill in the art would have recognized the substitutability of soft polyurethane for soft balata-based materials and the advantages of making such a substitution. These advantages include (1) low price compared to balata; (2) better cut resistance when compared to balata; and (3) a "click" and "feel" that is similar to balata. Moreover, the replacing the balata-material taught by Proudfit would have been obvious to those skilled in the art prior to November 9, 1995 because before that time, the Titleist Professional™ golf ball, which had used Wu's polyurethane material, had replaced balata-covered balls as the market leader. (See Decl. of Jeffrey L. Dalton at ¶¶ 3-4.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the alleged invention to modify Proudfit's golf ball by replacing the soft balata-based outer cover layer with an outer cover layer made of soft polyurethane material because Wu's polyurethane material has similar mechanical properties and provides numerous advantages over balata while exhibiting the "click" and "feel" of balata.

Therefore, claim 1 is obvious over Proudfit in view of Wu under 35 U.S.C. § 103(a). Because these references raise substantial new questions of patentability that were not previously considered by the PTO, reexamination of claim 1 of the '293 patent is proper.

6. Claim 1 is Obvious Over Proudfit in View of Molitor '751.

As discussed above, Proudfit teaches a golf ball having a two-piece cover including a hard, ionomeric inner cover layer and a soft balata outer cover layer. While Proudfit may not disclose the use of a polyurethane material as the outer cover layer for a golf ball, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Proudfit's golf ball by replacing the balata-based outer cover layer with an outer cover layer including a soft polyurethane material as taught by Molitor '751.

Molitor '751 teaches that:

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It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core a **cover having a shore C hardness less than 85**, preferably 70-80, and most preferably 72-76. The novel cover of the golf ball of the invention is made of a composition comprising a blend of (1) a **thermoplastic urethane** having a shore A hardness less than 95 and (2) an ionomer having a shore D hardness greater than 55.

(Molitor '751, col. 2, lines 33-49 (emphasis added).) In explaining what a "two-piece" golf ball is, the Molitor '751 patent teaches that:

The phrase "two piece ball" as used herein refers primarily to balls consisting of a molded core and a cover, but **also includes balls having a solid layer beneath the cover as disclosed, for example, in U.S. Pat. No. 4,431,193 to Nesbitt**, and other balls having non-wound cores.

(Molitor '751, col. 2, lines 7-12 (emphasis added).) Proudfit teaches a "two-piece" golf ball that fits within this definition. Molitor '751 explains that the advantages of using a cover including a soft polyurethane material on a two-piece golf ball, such as the golf ball of Proudfit, include "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Molitor expresses the hardness of the cover as a Shore C hardness of less than 85, preferably 70 to 85 and most preferably 72 to 76. (Molitor '751, col. 4, lines 21-25.) Based on Callaway's own measurements, a Shore C hardness of 73 is equal to a Shore D hardness of 47. (See U.S. Patent No. 6,905,648, Table 19 (**Exhibit L**.) A cover having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 64.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the soft balata outer cover layer of Proudfit with an outer cover layer

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including a soft polyurethane material as taught by of Molitor '751 to provide golf balls that have "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Therefore, Proudfit when taken in view of the teachings of Molitor '751 render claim 1 obvious under 35 U.S.C. § 103(a). Because these references raise substantial new questions of patentability that were not previously considered by the PTO, reexamination of claim 1 of the '293 patent is proper.

B. Claim 2

Claim 2 of the '293 patent depends from claim 1. Claim 2 further limits claim 1 to a golf ball that "has an overall diameter of 1.680 inches or more." Since January 1932, the USGA Rules of Golf have defined the minimum diameter of a golf ball to be 1.680 inches. (Exhibit M.) As then inventor of the '293 patent himself stated in a 1994 publication, "the golf ball designer must adhere to the Rules of Golf as put forth by the U.S.G.A...." (Exhibit G at 336.) Therefore, there is nothing inventive about developing a golf ball that conforms to the U.S.G.A. Rules of Golf.

1. Nesbitt Teaches all of the Elements of Claim 2

Nesbitt teaches a golf ball that conforms to the Rules of Golf. Nesbitt teaches each element of claim 2 as shown by the following chart:

Claim 2	Nesbitt
The golf ball according to claim 1,	See above, Section VI.A.1 to VI.A.3.
wherein said golf ball has an overall diameter of 1.680	"According to the United States Golf Association Rules, the minimum diameter prescribed for a golf ball is 1.680 "

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Claim 2	Nesbitt
inches or more.	<p>inches....” (Nesbitt, col. 2, lines 50-52.)</p> <p>“This center or core 12 and inner layer 14 of hard resinous material in the form of a sphere is then remolded into a dimpled golf ball of a diameter of 1.680 inches minimum with an outer or cover layer 16 of a soft, low flexural modulus resin....” (Nesbitt, col. 3, lines 34-38.)</p>

Therefore, Nesbitt teaches each and every element of claim 2 and anticipates claim 2 under 35 U.S.C. § 102(b). Alternatively, claim 2 is obvious over:

- Nesbitt in view of Molitor '637;
- Nesbitt in view of Wu; and/or
- Nesbitt in view of Molitor '751.

Because Nesbitt and/or Nesbitt when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 render claim 2 invalid under 35 U.S.C. §§ 102(b), 103(a), these references either alone or in combination raise substantial new questions as to the patentability of claim 2. Therefore reexamination of claim 2 of the '293 patent is proper.

2. Proudfit in Combination with Other References Teach All of the Limitations of Claim 2

Proudfit teaches a golf ball that has a total diameter of 1.680 inches as shown by the following claim chart:

Claim 2	Proudfit
The golf ball according to claim 1,	See above, Sections VI.A.4 to VI.A.6.
wherein said golf ball has an overall diameter of 1.680 inches or more.	“The preferred dimensions are a core diameter of 1.500 inch, and inner layer thickness of 0.037 inch (inner layer diameter of 1.575 inch), and an outer layer thickness of 0.0525 inch (total ball diameter of 1.680 inch).” (Proudfit, col. 7, lines 43-47.)

EXHIBIT B

Part II

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Proudfit when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 raise substantial new questions of patentability with respect to claim 2 that were not previously considered by the PTO. Therefore, reexamination of claim 2 of the '293 patent is appropriate.

C. Claim 3

Claim 3 of the '293 patent depends directly from claim 1. Claim 3 further limits the inner and outer cover layer thicknesses. Particularly, claim 3 limits the inner cover layer to "a thickness of about 0.050 inches" and the outer cover layer to a thickness of about 0.055 inches." Similar to claim 2, the golf ball of claim 3 is limited to a golf ball having a diameter of 1.680 inches or more. Golf balls having these features were described in printed publications well before the date of the alleged invention. Thus, no such golf ball was or is patentable.

1. Nesbitt Teaches All of the Elements of Claim 3

Nesbitt teaches each element of claim 3 as shown by the following chart:

Claim 3	Nesbitt
The golf ball according to claim 1,	See above, Section VI.A.1 to VI.A.3.
wherein said inner cover layer has a thickness of about 0.050 inches,	"It is found that the inner layer of hard, high flexural modulus resinous material such as Surlyn® resin type 1605, is preferably of a thickness in a range of 0.020 inches and 0.070 inches. " (Nesbitt, col. 3, lines 19-23.)
said outer cover layer has a thickness of about 0.055 inches,	" The thickness of the outer layer or cover 16 of soft, low flexural modulus resin such as Surlyn type 1855, may be in the range of 0.020 inches and 0.100 inches. " (col. 3, lines 22-25.) "The outer layer of the soft resin is of a thickness of 0.0575 inches. " (Nesbitt, col. 3, lines 39-40.)
and said golf ball has an overall diameter of 1.680 inches or more.	"According to the United States Golf Association Rules, the minimum diameter prescribed for a golf ball is 1.680 inches.... " (Nesbitt, col. 2, lines 50-52.) "This center or core 12 and inner layer 14 of hard resinous material in the form of a sphere is then remolded into a dimpled golf ball of a diameter of 1.680 inches minimum with an outer

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Claim 3	Nesbitt
	or cover layer 16 of a soft, low flexural modulus resin....” (Nesbitt, col. 3, lines 34-38.)

Therefore, Nesbitt teaches each and every element of claim 3 and anticipates claim 3 under 35 U.S.C. § 102(b). Alternatively, claim 3 is obvious over:

- Nesbitt in view of Molitor '637;
- Nesbitt in view of Wu; and/or
- Nesbitt in view of Molitor '751.

Because Nesbitt and/or Nesbitt when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 render claim 3 invalid under 35 U.S.C. §§ 102(b), 103(a), these references either alone or in combination raise substantial new questions as to the patentability of claim 3. Therefore, reexamination of claim 3 of the '293 patent is proper.

2. Proudfit in Combination with Other References Teach All of the Limitations of Claim 3

Proudfit teaches a golf ball that exhibits the properties required by claim 3:

Claim 3	Proudfit
The golf ball according to claim 1,	See above, Sections VI.A.4 to VI.A.6.
wherein said inner cover layer has a thickness of about 0.050 inches,	“The thickness of the inner layer can be within the range of about 0.0250 to 0.2875 inch to provide a total diameter of the inner layer and core within the range of about 1.550 to 1.590 inch.” (Proudfit, col. 7, lines 37-40.) “The preferred dimensions are ... and inner layer thickness of 0.037 inch.... ” (Proudfit, col. 7, lines 43-44.)
said outer cover layer has a thickness of about 0.055 inches,	“The thickness of the outer layer can be within the range of about 0.0450 to 0.0650 inch to provide a total ball diameter of 1.680 inch. The preferred dimensions are ... an outer layer thickness of 0.0525 inch.... ” (Proudfit, col. 7, lines 40-46.)
and said golf ball has an overall diameter of 1.680	“The preferred dimensions are a core diameter of 1.500 inch, and inner layer thickness of 0.037 inch (inner layer diameter of 1.575

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Claim 3	Proudfit
inches or more.	inch), and an outer layer thickness of 0.0525 inch (total ball diameter of 1.680 inch)." (Proudfit, col. 7, lines 43-47.)

Proudfit when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 raise substantial new questions of patentability with respect to claim 3 that were not previously considered by the PTO. Therefore reexamination of claim 3 of the '293 patent is appropriate.

D. Claim 4

Claim 4 of the '293 patent is an independent claim directed to "a multi-layer golf ball" including a relatively hard, high-modulus, low acid ionomeric inner cover layer and a relatively soft outer cover layer including a polyurethane material. The multi-layer golf ball also includes dimples. The multi-layer golf ball as recited in claim 4 includes:

- (a) "a spherical core;"
- (b) "an inner cover layer having ..."
 - a. "a Shore D hardness of about 60 or more molded over said spherical core,"
 - b. "said inner cover layer comprising an ionomeric resin including no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid and"
 - c. "having a modulus of from about 15,000 to about 70,000 psi; and"
- (c) "an outer cover layer having ..."
 - a. "a Shore D hardness of 64 or less disposed about said inner cover layer and"
 - b. "defining a plurality of dimples to form a multi-layer golf ball,"
 - c. "said outer cover layer comprising polyurethane based material."

The golf ball defined by claim 4 was far from novel, well before November 9, 1995. Golf balls including each and every element recited in claim 4 were taught in prior art patents and/or

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were obvious to those skilled in the art prior to the effective filing date of the claims of the '293 patent.

1. Claim 4 is Anticipated by Nesbitt or in the or in the Alternative, is Obvious Over Nesbitt in view of Molitor '637¹⁰

Nesbitt discloses a golf ball including "an inner layer 14 of hard, high flexural modulus resinous material" and an "outer layer or cover 16 of soft ... resin." (Nesbitt, col. 1, lines 20-25.) Nesbitt issued on February 14, 1984 and is therefore prior art to the claims of the '293 patent under 35 U.S.C. § 102(b).

One specific example of a multi-layer golf ball disclosed in Nesbitt includes an inner cover of Surlyn® 1605 and an outer cover made of Surlyn® 1855. Surlyn® 1605, (now designated Surlyn® 8940) has a Shore D hardness of 65 and exhibits a flexural modulus of about 51,000 psi. (See **Exhibit I** (Product Information Sheet for Surlyn®); see also '293 patent, col. 2, lines 53-58, Table 1.) Surlyn® 1855 (now designated as Surlyn® 9020) has a Shore D hardness of 55. (**Exhibit I**.) As Nesbitt makes clear, however, these cover materials are merely exemplary. (Nesbitt, col. 2, lines 37, 45 (stating that materials "such as" Surlyn® resins may be used); col. 3, lines 21, 25 (same).)

As a further indication that Nesbitt's disclosure was not limited to the use of Surlyn® ionomers, Nesbitt incorporates the "polymeric materials" taught by the Molitor '637 patent by reference.¹¹ (Nesbitt, col. 3, lines 56-61.) Molitor '637 teaches a limited number of polymeric materials for use as golf ball cover layers, including soft polyurethane materials. (Molitor '637,

¹⁰ Much of the analysis presented with respect to claims 1-3 has been substantially repeated for the benefit of the Examiner for the remainder of the claims 4-8. This repetition is not intended to burden the Examiner but rather to assist the Examiner in reviewing this request in light of the new image file wrapper system and to avoid the need for repeated cross referencing throughout this request.

¹¹ See *supra* footnote 6.

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col. 5, lines 33-55; cols. 18-19, Examples 16-19.) Therefore, Molitor '637's soft polyurethane cover material is incorporated by reference into Nesbitt as an outer cover layer as if it were part of the original disclosure.

Nesbitt teaches a golf ball having the properties required by claim 4 as illustrated by the following chart:

Claim 4	Nesbitt
A multi-layer golf-ball comprising:	"The disclosure embraces a golf ball and method of making same" (Nesbitt, Abstract; FIGS 1 & 2.)
a spherical core;	"Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a solid center or core formed as a solid body of resilient polymeric material or rubber-like material in the shape of a sphere. " (Nesbitt, col. 2, lines 31-34.)
an inner cover layer having ...	"Disposed on the spherical center or core 12 is a first layer, lamination, ply or inner cover 14 of molded hard, highly flexural modulus resinous material...." (Nesbitt, col. 2, lines 34-37.)
a Shore D hardness of 60 or more molded over said spherical core	" [I]nner cover 14 of molded hard, highly flexural modulus resinous material such as type 1605 Surlyn® marketed by E.I. DuPont de Nemours." (Nesbitt, col. 2, lines 36-38.) " [A] center or core 12 ... is molded with a layer of hard, high modulus Surlyn resin, such as Surlyn type 1605... " (Nesbitt, col. 3, lines 27-29.) DuPont Surlyn Product Information: ¹²
	Surlyn® 8940 (formerly 1605 (see '293 patent, col. 2, lines 54-55)) has a Shore D hardness of 65. (See Exhibit I.)

¹² Attached as Exhibit I.

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Claim 4	Nesbitt
said inner cover layer comprising an ionomeric resin including no more than 16% by weight of alpha, beta-unsaturated carboxylic acid	<p>Surlyn® 1605 is a low acid ionomeric resin.</p> <p>Per the '293 Patent: "Type 1605 Surlyn® (Surlyn® 8940) is a sodium ion based low acid (less than or equal to 15 weight percent methacrylic acid) ionomer resin..." ('293 patent, col. 2, lines 54-58.) Methacrylic acid is an alpha, beta-unsaturated carboxylic acid.</p>
and having a modulus of from about 15,000 to about 70,000 psi	<p>Surlyn® 1605 inherently exhibits the claimed modulus.</p> <p>"Type 1605 Surlyn (Surlyn 8940) is a sodium ion based low acid (less than or equal to 15 weight percent methacrylic acid) ionomer resin having a flexural modulus of about 51,000 psi." ('293 patent, col. 2, lines 55-59; <i>see also</i> Surlyn® Product Information, Exhibit I.)</p>
an outer cover layer having	<p>"An outer layer, ply, lamination or cover 16 ... is then remolded onto the inner ply or layer 14...." (Nesbitt, col. 2, lines 43-47.)</p>
a Shore D hardness of about 64 or less	<p>Nesbitt: Nesbitt teaches an outer cover layer of Surlyn® 1855 (now Surlyn® 9020) that has a Shore D hardness of 55.</p> <p>Nesbitt Incorporates the Materials of Molitor '637 by Reference: "Reference is made to the application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention." (Nesbitt, col. 3, lines 54-60.)</p>
	<p>Molitor '637. Teaches the use of Estane 58133 in Examples 16 and 17. (Molitor '637, col. 18.) This cover material inherently has a Shore D hardness of 55.¹³</p>
disposed about said inner cover layer and defining a plurality of dimples to form a multi-layer golf ball	<p>"An outer layer, ply, lamination or cover 16 of comparatively soft, low flexural modulus resinous material ... is then re-molded onto the inner ply or layer 14" (Nesbitt, col. 2, lines 43-47.)</p> <p>"[T]he outer layer or cover 16 being of dimpled</p>

¹³ Compare Exhibit I with Exhibit J.

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Claim 4	Nesbitt
said outer layer comprising polyurethane.	<p data-bbox="688 363 1362 399">configuration..." (Nesbitt, col. 2, lines 48-49; Fig. 2.)</p> <p data-bbox="688 399 1263 434"><u>Nesbitt Incorporates Materials of Molitor by Reference:</u></p> <p data-bbox="688 434 1395 651">"Reference is made to the application Ser. No. 155,658, of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for one or both layers 14 and 16." (Nesbitt, col. 3, lines 54-60.)</p> <p data-bbox="688 682 1362 863"><u>Molitor '637:</u> Teaches cover materials including "polyurethanes such as are prepared from polyols and organic polyisocyanates"; specifically Estane 58133 thermoplastic polyurethane. (Molitor '637, col. 5, lines 39-41; col. 18, lines 31-59 (examples 16 and 17).)</p>

Therefore, Nesbitt anticipates claim 4 because: (1) Nesbitt incorporates the relatively soft Estane 58133 polyurethane of Molitor '637 and (2) the Estane 58133 polyurethane material inherently has a Shore D hardness of 55, well within the claimed range. *See* M.P.E.P. §§ 2163.07 (incorporation by reference permitted); 2131.01 (multiple reference § 102 rejection appropriate when showing an aspect of a primary reference is inherent).

Additionally, the alleged invention recited in claim 4 would have been obvious to those skilled in the art at the time of the alleged invention. For example, Nesbitt provides express motivation to incorporate the soft polyurethane material disclosed in Molitor '637 as the soft outer cover layer by its specific reference to Molitor '637's "polymeric materials." (Nesbitt, col. 3, lines 51-61.) Prior to the alleged invention, polyurethane was known to have a number of advantageous properties for use in golf ball outer cover layers. (*See, e.g.*, GB '196, col. 1, lines 38-44; *supra* IV.C.1.)

Even more, however, is the recognition by those skilled in the art, including the inventor of the '293 patent himself, that the type of material used in the golf ball is not as important as the mechanical properties of the golf ball materials. (*See Exhibit G*; Molitor '906 (*Exhibit H*))

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(teaching that properties such as flexural modulus of the material should be considered when designing a golf ball for a particular application).) For example, Nesbitt's exemplary outer cover layer material was Surlyn® 1855 (now Surlyn® 9020), which has a flexural modulus of about 14,000 psi and a Shore D hardness of about 55. (See **Exhibit I**.) The Estane 58133 polyurethane taught by Molitor '637 has a Shore D hardness of 55 and a flexural modulus of about 25,000 psi. (See **Exhibit J**.) Given that both of these materials are relatively soft, low modulus materials, those skilled in the art would have appreciated, at the time of the invention, that Molitor's Estane 58133 thermoplastic polyurethane was substitutable for the soft, low modulus Surlyn® 1855 used in Nesbitt's exemplary golf ball.

Accordingly, Nesbitt teaches every limitation of claim 4, and thereby anticipates claim 4 under 35 U.S.C. § 102(b) and/or renders claim 4 obvious under 35 U.S.C. § 103(a) when taken in view of Molitor '637. Therefore, Nesbitt and its incorporation of Molitor '637 raise substantial new questions of patentability with respect to claim 4 that were not previously considered by the PTO. Therefore, reexamination of claim 4 of the '293 patent is appropriate.

2. Claim 4 is Obvious over Nesbitt in View of Wu

While Nesbitt discloses a particular soft, low modulus polyurethane material (i.e., Estane 58133) for use as a golf ball cover, it would have been obvious to use the soft, low modulus polyurethane material taught by Wu as the outer cover layer of Nesbitt's golf ball at the time of the alleged invention. Nesbitt teaches a multi-layer golf ball having an outer cover layer made of a soft, low modulus polymeric material, such as, for example, Molitor '637's soft, low modulus polyurethane material.

Wu teaches that:

The problem with SURLYN®-covered golf balls, however, is that they lack the "click" and "feel" which golfers had become accustomed to with balata. "Click" is the sound when the ball is

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hit by a golf club and "feel" is the overall sensation imparted to the golfer when the ball is hit.

It has been proposed to employ polyurethane as a cover stock for golf balls because, like SURLYN®, it has a relatively low price compared to balata and provides superior cut resistance over balata. *However, unlike SURLYN®-covered golf balls, polyurethane-covered golf balls can be made to have the "click" and "feel" of balata.*

(Wu at col. 1, lines 36-46 (emphasis added).) This rationale was adopted by the BPAI in a related application in affirming an Examiner's rejection of a similar claim. The BPAI held:

In applying the test for obviousness⁶ we conclude that the teachings of Wu clearly would have made it obvious at the time the invention was made to a person of ordinary skill in the art to have modified Nesbitt's golf ball by using polyurethane as the outer cover material to achieve the expected benefits therefrom taught by Wu (i.e., to have the "click" and "feel" of balata; improved shear resistance and cut resistance; durability; and resiliency). Thus, it would have been obvious to one skilled in the art to have modified Nesbitt's three-piece golf ball having a spherical core, an inner layer of type 1605 Surlyn® and an outer layer of type 1855 Surlyn® by replacing the type 1855 Surlyn® in the outer layer with polyurethane as suggested and taught by Wu.

(*Ex Parte Sullivan*, PTO Bd. Of Patent App. & Int. at 11, Jan. 30, 2004 (decision in U.S. Patent Application Serial No. 08/873,594) (**Exhibit K**).)

Moreover, as recognized by the inventor of the '293 patent himself, the particular materials used in the golf balls were not as important as the mechanical properties of those layers. (See **Exhibit G** at 334.) The Surlyn® 1855 (now Surlyn® 9020) taught in Nesbitt's primary example has a Shore D hardness of 55 and a flexural modulus of about 14,000 psi. Wu's polyurethane material has a Shore D hardness of 58 as measured on the surface of the golf ball. (**Exhibit C** (showing that the polyurethane material used as the outer cover layer on the Titleist Professional™ golf ball has a Shore D hardness of 58); see also Decl. of Jeffrey L. Dalton at ¶ 6.) In addition to being soft, Wu's polyurethane is a relatively low flexural modulus material. For

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example, this material has a flexural modulus of about 23,000 psi when measured according to ASTM standards. (Decl. of Jeffrey L. Dalton at ¶ 7.) This is very similar to the hardness of the Surlyn® 1855 used in one example taught by Nesbitt. Thus, those skilled in the art would have been led to substitute the soft, low modulus polyurethane of Wu for the soft, low modulus ionomer cover layer of Nesbitt because such would give the same or improved playability properties and would improve durability properties.

Thus, those skilled in the art would have been led to substitute the polyurethane of Wu for the soft ionomer cover layer of Nesbitt because such would give the same or improved playability properties and would provide improved durability properties. Additionally, it would have been obvious to modify the golf ball of Nesbitt to include an outer cover layer using the polyurethane disclosed by Wu because it provides a golf ball having a good “click” and “feel” and exhibits improved shear resistance and cut resistance when compared to balata-covered balls.

Thus, claim 4 is obvious under 35 U.S.C. § 103(a) over Nesbitt in view of Wu. Therefore, these references raise substantial new questions of patentability that were not previously considered by the PTO. Therefore, reexamination of claim 4 of the '293 patent is appropriate.

3. Claim 4 is Obvious over Nesbitt in view of Molitor '751

In addition to being anticipated by Nesbitt, claim 4 is also obvious under 35 U.S.C. § 103(a) over Nesbitt in view of Molitor '751. While Nesbitt describes an outer cover layer including a soft polyurethane material (i.e., the Estane 58133 incorporated from Molitor '637), it would have been obvious to include the relatively soft outer cover layer taught by Molitor '751, which includes a polyurethane-based material as the outer cover layer of the Nesbitt golf ball for the reasons provided by Molitor '751.

Molitor '751 teaches that:

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It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core **a cover having a Shore C hardness less than 85**, preferably 70-80, and most preferably 72-76. The novel cover of the golf ball of the invention is made of a composition comprising a blend of (1) a **thermoplastic urethane** having a shore A hardness less than 95 and (2) an ionomer having a shore D hardness greater than 55.

(Molitor '751, col. 2, lines 33-49 (emphasis added).) In explaining what a "two-piece" golf ball is, Molitor '751 patent teaches that:

The phrase "two piece ball" as used herein refers primarily to balls consisting of a molded core and a cover, but **also includes balls having a solid layer beneath the cover as disclosed, for example, in U.S. Pat. No. 4,431,193 to Nesbitt**, and other balls having non-wound cores.

(Molitor '751, col. 2, lines 7-12 (emphasis added).) Molitor explains that the advantages of using this cover on a two-piece golf ball, such as the golf ball of Nesbitt, include "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Molitor expresses the hardness of the cover as a Shore C hardness of less than 85, preferably 70 to 85 and most preferably 72 to 76. (Molitor '751, col. 4, lines 21-25.) Based on Callaway's own measurements, a Shore C hardness of 73 is equal to a Shore D hardness of 47. (See U.S. Patent No. 6,905,648, Table 19, **Exhibit L**.) Therefore, a cover having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 64.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the soft outer cover layer of Nesbitt with an outer cover made of the soft polyurethane materials taught by Molitor '751 to provide a golf ball that exhibits "playability

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properties as good or better than balata-covered wound balls but are significantly more durable,” and “have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot” while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Therefore, claim 4 is obvious under 35 U.S.C. § 103(a) over Nesbitt in view of Moitor '751. These references raise substantial new questions of patentability that were not considered during the original examination. Therefore, reexamination of the '293 patent is appropriate.

4. Claim 4 is Obvious Over Proudfit in View of Molitor '637

Proudfit discloses a three-piece solid golf ball that includes a core, a hard ionomer inner cover layer and a relatively soft outer cover layer made of a balata or balata-based material. (Proudfit, Abstract; col. 5, lines 43-52.) Proudfit teaches that: “A number of golfers, primarily professional and low handicap golfers, prefer balata covered balls because of the higher spin rate, control, “feel,” and “click” which balata provides.” (Proudfit, col. 1, lines 49-52.) While Proudfit may not disclose the use of a polyurethane outer cover, it would have been obvious to modify Proudfit to include an outer cover made of polyurethane rather than the balata material disclosed therein because Proudfit seeks to solve the same problems associated with Surlyn-covered golf balls that polyurethane had been used to solve for years. Moreover, polyurethane has advantages over both balata- and Surlyn-covered golf balls as would have been readily appreciated by those skilled in the art prior to the critical date.

Proudfit's teachings are illustrated in the following claim chart:

Claim 4	Proudfit
A multi-layer golf-ball comprising:	“This invention relates to golf balls, and more particularly, to a golf ball having a two-layer cover.” (col. 1, lines 11-12.)
a spherical core;	“FIG. 1 illustrates a two-piece golf ball 10 which includes a solid

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Claim 4	Proudfit						
	<p>core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material.” (col. 7, lines 21-24; FIGS 1, 2.)</p> <p>“Two specific solid core compositions used with the new two-layer cover had the composition described in Table 1. One core was used in a golf ball which was designated as a 90 compression ball, and the other core was used in a golf ball which was designated as a 100 compression ball.” (col. 7, lines 51-55.)</p>						
<p>an inner cover layer having ...</p>	<p>“FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material.” (col. 7, lines 21-24.)</p>						
<p>a Shore D hardness of 60 or more molded over said spherical core</p>	<p>“The composition of the inner cover layer is described in Table 6.”</p> <div data-bbox="707 951 1338 1134" style="text-align: center;"> <p>TABLE 6</p> <hr/> <p>Composition of Inner Layer of Cover (Parts by Weight)</p> <hr/> <table> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </table> <hr/> </div> <p>(col. 8, lines 22-30.)</p> <p>Surlyn® 8940 has a Shore D hardness of 65; Surlyn® 9910 has a Shore D hardness of 64 (Exhibit L). Therefore, this cover blend has a hardness of 60 or more. (See Decl. of Edmund A. Hebert at ¶¶ 8-9.)</p> <p>“The inner layer can be molded in one of two methods:</p> <ol style="list-style-type: none"> 1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core.” (col. 8, lines 32-38.) 	Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Ionomer Type	Blend Ratio						
Sodium- Surlyn 8940	75%						
Zinc- Surlyn 9910	25%						
<p>said inner cover layer comprising an ionomeric resin including no more than 16% by weight of alpha, beta-unsaturated carboxylic acid</p>	<p>“The composition of the inner cover layer is described in Table 6.”</p>						

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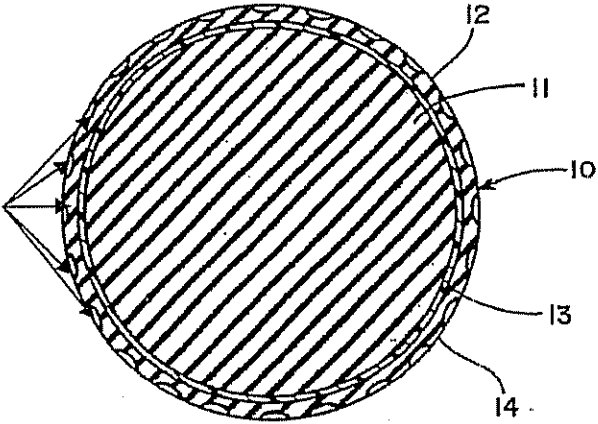
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Claim 4	Proudfit								
	<p style="text-align: center;">TABLE 6</p> <table border="1" style="margin: auto;"> <thead> <tr> <th colspan="2">Composition of Inner Layer of Cover (Parts by Weight)</th></tr> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> </thead> <tbody> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </tbody> </table> <p>(col. 8, lines 22-30.)</p> <p>Surlyn® 8940 and Surlyn® 9910 are both low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid.</p>	Composition of Inner Layer of Cover (Parts by Weight)		Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Composition of Inner Layer of Cover (Parts by Weight)									
Ionomer Type	Blend Ratio								
Sodium- Surlyn 8940	75%								
Zinc- Surlyn 9910	25%								
<p>and having a modulus of from about 15,000 to about 70,000 psi</p>	<p>“The standard resins have a flexural modulus in the range of about 30,000 to about 55,000 psi as measured by ATM Method D-790. (Standard resins are referred to as “hard Surlins” in U.S. Patent No. 4,884,814.)” (col. 5, line 66-col. 6, line 1.)</p> <p>“Specific standard Surlyn resins which can be used in the inner layer include 8940 (sodium), 9910 (zinc)” (col. 6, lines 6-7.)</p> <p>“The composition of the inner cover layer is described in Table 6.”</p> <p style="text-align: center;">TABLE 6</p> <table border="1" style="margin: auto;"> <thead> <tr> <th colspan="2">Composition of Inner Layer of Cover (Parts by Weight)</th></tr> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> </thead> <tbody> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </tbody> </table> <p>(col. 8, lines 22-30.) Therefore, the cover will inherently have a flexural modulus between 15,000 psi and 70,000 psi.</p>	Composition of Inner Layer of Cover (Parts by Weight)		Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Composition of Inner Layer of Cover (Parts by Weight)									
Ionomer Type	Blend Ratio								
Sodium- Surlyn 8940	75%								
Zinc- Surlyn 9910	25%								
<p>an outer cover layer having</p>	<p>“... an outer layer of soft material such as balata or a blend of balata and other elastomers.” (col. 5, lines 15-17.)</p>								
<p>a Shore D hardness of about 64 or less</p>	<p>“... an outer layer of soft material such as balata or a blend of balata and other elastomers.” (col. 5, lines 15-17.) This material inherently has a Shore D hardness of less than 64. (See Decl. of Edmund A. Hebert at ¶ 7.)</p>								

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Claim 4	Proudfit
disposed about said inner cover layer and defining a plurality of dimples to form a multi-layer golf ball	<p style="text-align: center;">Fig. 1</p>  <p>[plurality of dimples]</p>
said outer layer comprising polyurethane.	“... an outer layer of soft material such as balata or a blend of balata and other elastomers.” (col. 5, lines 15-17.)

While Proudfit may not expressly disclose the use of polyurethane as an outer cover material, it would have been obvious given that “[t]he patent literature is replete with proposed cover formulations seeking to improve upon the balata and ionomer covers [including] [p]olyurethane....” (Molitor ’751 patent, col. 2, lines 9-12.) Soft polyurethane materials had been known to be a substitute for balata covers for decades prior to the filing of the ’293 patent.

For example, Molitor ’637 discloses the use of polyurethane material as a soft polymeric material that may be used as an outer cover layer of a golf ball. (See Molitor ’637, col. 5, lines 33-41; col. 18; Examples 16 and 17.) One exemplary polyurethane material used by Molitor as an outer cover material includes Estane 58133.

As was readily appreciated by those skilled in the art—including the inventor of the ’293 patent—the types of materials used in a golf ball are not as critical to a golf ball’s playability as are the mechanical properties of those materials. (See Exhibit G at 334.) The Estane 58133 is a relatively soft material and has a Shore D hardness of 55 and is also a low flexural modulus material having a modulus of about 25,000 psi. (See Exhibit J.) Proudfit’s outer cover layer is

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also relatively soft and has a flexural modulus between 20,000 and 25,000 psi. (Proudfit, col. 6, lines 28-31.) Due to the similarities between these two materials, the ordinarily skilled artisan would have recognized the substitutability of these two materials as well as the benefits of using polyurethane as an outer cover material.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the balata-based outer cover layer of Proudfit to include the Estane polyurethane outer cover layer material of Molitor '637 because such was a well known substitute to balata and gives a number of advantages over balata as would have been readily appreciated by those skilled in the art. These advantages include: (1) improved processability; (2) improved durability when compared to balata; (3) cost-effectiveness when compared to balata; and (4) having a good "click" and "feel." (*See supra* Part IV.C.1.) All of this would have led one of ordinary skill in the art to replace the soft balata outer cover layer of Proudfit with the soft polyurethane outer cover layer of Molitor '637 at the time of the alleged invention.

Therefore, Proudfit when taken in view of Molitor '637 renders claim 4 obvious under 35 U.S.C. § 103(a). Because these references raise substantial new questions of patentability that were not previously considered by the PTO, reexamination of claim 4 of the '293 patent is proper.

5. Claim 4 is Obvious Over Proudfit in View of Wu

As discussed above, Proudfit teaches a golf ball having a two-piece cover including a hard, ionomeric inner cover layer and a soft balata outer cover layer. While Proudfit may not disclose the use of a polyurethane material as the outer cover layer of a golf ball, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the soft balata outer cover layer of Proudfit to include the soft polyurethane material taught by Wu.

Wu teaches that:

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The problem with SURLYN®-covered golf balls, however, is that they lack the “click” and “feel” which golfers had become accustomed to with balata. “Click” is the sound when the ball is hit by a golf club and “feel” is the overall sensation imparted to the golfer when the ball is hit.

It has been proposed to employ polyurethane as a cover stock for golf balls because, like SURLYN®, it has a relatively low price compared to balata and provides superior cut resistance over balata. However, unlike SURLYN®-covered golf balls, polyurethane-covered golf balls can be made to have the “click” and “feel” of balata.

(Wu at col. 1, lines 36-46 (emphasis added).)

As the inventor of the '293 patent had indicated in a 1994 publication, golf ball designers understood that the mechanical properties of the layers impacted the performance of the golf ball more than the materials themselves. (Exhibit G at 334.) Additionally, Wu's polyurethane material inherently has a flexural modulus of about 23,000 psi as tested in accordance with ASTM standards. (Decl. of Jeffrey L. Dalton ¶ 7.) Proudfit's outer cover layer material has a flexural modulus of between about 20,000 and 25,000 psi. (Proudfit, col. 6, lines 28-31.) Thus, one of ordinary skill in the art would have appreciated that using Wu's polyurethane as Proudfit's outer cover layer would have provided similar playability characteristics as well as numerous advantages including, for example, durability.

Based on Wu's teachings one of ordinary skill in the art would have recognized the ~~substitutability of polyurethane for balata-based materials and the advantages of making such a~~ substitution. These advantages include (1) low price compared to balata; (2) better cut resistance when compared to balata; and (3) a “click” and “feel” that is similar to balata. Moreover, the replacing the balata-material taught by Proudfit would have been obvious to those skilled in the art prior to November 9, 1995 because before that time, the Titleist Professional™ golf ball, which had used Wu's polyurethane material, had replaced balata-covered balls as the market leader. (See Decl. of Jeffrey L. Dalton at ¶¶ 3-4.)

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Therefore, it would have been obvious to one of ordinary skill in the art at the time of the alleged invention to modify Proudfit's golf ball by replacing the soft balata outer cover layer with an outer cover layer made of soft polyurethane material because polyurethane provides numerous advantages over balata while exhibiting the "click" and "feel" of balata.

Therefore, claim 4 is obvious under 35 U.S.C. § 103(a) over Proudfit in view of Wu. Because these references raise substantial new questions of patentability that were not previously considered by the PTO, reexamination of claim 4 of the '293 patent is proper.

6. Claim 4 is Obvious Over Proudfit in View of Molitor '751

As discussed above, Proudfit teaches a golf ball having a two-piece cover including a hard, ionomeric inner cover layer and a soft balata outer cover layer. While Proudfit may not disclose the use of a polyurethane material as the outer cover layer for a golf ball, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Proudfit's golf ball by replacing the soft balata outer cover layer with a soft polyurethane outer cover layer as taught by Molitor '751.

Molitor '751 teaches that:

It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core a **cover having a shore C hardness less than 85**, preferably 70-80, and most preferably 72-76. The novel cover of the golf ball of the invention is made of a composition comprising a blend of (1) a **thermoplastic urethane** having a shore A hardness less than 95 and (2) an ionomer having a shore D hardness greater than 55.

(Molitor '751, col. 2, lines 33-49 (emphasis added).) In explaining what a "two-piece" golf ball is, Molitor '751 teaches that:

The phrase "two piece ball" as used herein refers primarily to balls consisting of a molded core and a cover, but **also includes balls having a solid layer beneath the cover as disclosed, for**

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example, in U.S. Pat. No. 4,431,193 to Nesbitt, and other balls having non-wound cores.

(Molitor '751, col. 2, lines 7-12 (emphasis added).) Proudfit teaches a "two-piece" golf ball that fits within this definition. Molitor '751 explains that the advantages of using a cover layer including a soft polyurethane material on a two-piece golf ball, such as the golf ball of Proudfit, include "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Molitor expresses the hardness of the cover as a Shore C hardness of less than 85, preferably 70 to 85 and most preferably 72 to 76. (Molitor '751, col. 4, lines 21-25.) Based on Callaway's own measurements, a Shore C hardness of 73 is equal to a Shore D hardness of 47. (See U.S. Patent No. 6,905,648, Table 19 (Exhibit L.) Therefore, a cover having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 60.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the soft balata outer cover layer of Proudfit with a soft polyurethane outer cover layer material as taught by Molitor '751 to provide golf balls that have "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Therefore, Proudfit when taken in view of the teachings of Molitor '751 render claim 4 obvious under 35 U.S.C. § 103(a). Because these references raise substantial new questions of patentability that were not previously considered by the PTO, reexamination of claim 4 of the '293 patent is proper.

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E. Claim 5

Claim 5 of the '293 patent depends directly from claim 4. Claim 5 limits the inner and outer cover layer thicknesses and the golf ball diameter. Particularly, claim 5 limits the inner cover layer to an "inner cover layer [having] a thickness of about 0.100 to about 0.010 inches" and the outer cover layer to an "outer cover layer [having] a thickness of about 0.010 to about 0.070 inches." The golf ball has a minimum diameter of 1.680 inches, which has been the minimum diameter permitted under the USGA Rules of Golf since 1932. (See **Exhibit M**; **Exhibit G** at 336 (teaching that "the golf ball designer *must adhere to the rules of golf as put forth by the USGA*"(emphasis added).) Claim 5 was unpatentable at the time of alleged invention.

1. Nesbitt Teaches all of the Elements of Claim 5

Nesbitt teaches each element of claim 5 as shown by the following chart:

Claim 5	Nesbitt
A golf ball according to claim 4	See above, Section VI.D.1 to VI.D.3.
wherein said inner cover layer has a thickness of about 0.100 to about 0.010 inches	"It is found that the inner layer of hard, high flexural modulus resinous material such as Surlyn® resin type 1605, is preferably of a thickness in a range of 0.020 inches and 0.070 inches. " (Nesbitt, col. 3, lines 19-23.)
and said outer cover layer has a thickness of about 0.010 to about 0.010 inches,	"The thickness of the outer layer or cover 16 of soft, low flexural modulus resin such as Surlyn type 1855, may be in the range of 0.020 inches and 0.100 inches. " (Nesbitt, col. 3, lines 22-25.) "The outer layer of the soft resin is of a thickness of 0.0575 inches. " (Nesbitt, col. 3, lines 39-40.)
said golf ball having an overall diameter of 1.680 inches or more.	"According to the United States Golf Association Rules, the minimum diameter prescribed for a golf ball is 1.680 inches.... " (Nesbitt, col. 2, lines 50-52.) "This center or core 12 and inner layer 14 of hard resinous material in the form of a sphere is then remolded into a dimpled

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Claim 5	Nesbitt
	golf ball of a diameter of 1.680 inches minimum with an outer or cover layer 16 of a soft, low flexural modulus resin....” (Nesbitt, col. 3, lines 34-38.)

Therefore, Nesbitt teaches each and every element of claim 5 and therefore, anticipates claim 5 under 35 U.S.C. § 102(b). Alternatively, claim 5 is obvious over:

- Nesbitt in view of Molitor '637;
- Nesbitt in view of Wu; and/or
- Nesbitt in view of Molitor '751.

Because Nesbitt and/or Nesbitt when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 render claim 5 invalid under 35 §§ U.S.C. 102(b) and/or 103(a), these references either alone or in combination raise substantial new questions as to the patentability of claim 5. Therefore, reexamination of claim 5 of the '293 patent is proper.

2. Proudfit in Combination with Other References Teach All of the Limitations of Claim 5

Proudfit teaches a golf ball that exhibits the properties required by claim 5 as illustrated by the following chart:

Claim 5	Proudfit
A golf ball according to claim 4	See above, Sections VLD.4 to VLD.6.
wherein said inner cover layer has a thickness of about 0.100 to about 0.010 inches	“The thickness of the inner layer can be within the range of about 0.0250 to 0.2875 inch to provide a total diameter of the inner layer and core within the range of about 1.550 to 1.590 inch.” (col. 7, lines 37-40.) “The preferred dimensions are ... an inner layer thickness of 0.037 inch.... ” (col. 7, lines 43-44.)
and said outer cover layer has a thickness of about 0.010 to about 0.010 inches,	“The thickness of the outer layer can be within the range of about 0.0450 to 0.0650 inch to provide a total ball diameter of 1.680 inch. The preferred dimensions are ... an outer layer

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Claim 5	Proudfit
	thickness of 0.0525 inch...." (col. 7, lines 40-46.)
said golf ball having an overall diameter of 1.680 inches or more.	"The preferred dimensions are a core diameter of 1.500 inch, and inner layer thickness of 0.037 inch (inner layer diameter of 1.575 inch), and an outer layer thickness of 0.0525 inch (total ball diameter of 1.680 inch)." (col. 7, lines 43-47.)

Proudfit when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 render claim 5 obvious under 35 U.S.C. § 103(a). Thus, these references raise substantial new questions of patentability with respect to claim 5 that were not previously considered by the PTO.

Therefore, reexamination of claim 5 of the '293 patent is proper.

F. Claim 6

Claim 6 of the '293 patent depends directly from claim 4. Claim 6 further limits the inner and outer cover thicknesses. Particularly, claim 6 limits the inner cover to an "inner cover layer [having] a thickness of about 0.050 inches" and the outer cover to an "outer cover layer [having] a thickness of about 0.055 inches." Similar to claim 5, the golf ball of claim 6 is limited to a golf ball having a diameter of 1.680 inches or more. The golf ball defined by claim 6 was neither novel nor non-obvious prior to the critical date.

1. Nesbitt Teaches all of the Elements of Claim 6

Nesbitt teaches each element of claim 6 as shown by the following chart:

Claim 6	Nesbitt
A golf ball according to claim 4,	See above, Section VI.D.1 to VI.D.3.
wherein said inner cover layer has a thickness of about 0.050 inches,	"It is found that the inner layer of hard, high flexural modulus resinous material such as Surlyn® resin type 1605, is preferably of a thickness in a range of 0.020 inches and 0.070 inches. " (Nesbitt, col. 3, lines 19-23.)
said outer cover layer has a thickness of about 0.055	"The thickness of the outer layer or cover 16 of soft, low flexural modulus resin such as Surlyn type 1855, may be in the

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Claim 6	Nesbitt
inches,	range of 0.020 inches and 0.100 inches." (col. 3, lines 22-25.) "The outer layer of the soft resin is of a thickness of 0.0575 inches." (Nesbitt, col. 3, lines 39-40.)
and said golf ball has an overall diameter of 1.680 inches or more.	"According to the United States Golf Association Rules, the minimum diameter prescribed for a golf ball is 1.680 inches...." (Nesbitt, col. 2, lines 50-52.) "This center or core 12 and inner layer 14 of hard resinous material in the form of a sphere is then remolded into a dimpled golf ball of a diameter of 1.680 inches minimum with an outer or cover layer 16 of a soft, low flexural modulus resin...." (Nesbitt, col. 3, lines 34-38.)

Therefore, Nesbitt teaches each and every element of claim 6 and therefore, anticipates claim 6 under 35 U.S.C. § 102(b). Alternatively, claim 6 is obvious over:

- Nesbitt in view of Molitor '637;
- Nesbitt in view of Wu; and/or
- Nesbitt in view of Molitor '751.

Because Nesbitt and/or Nesbitt when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 render claim 6 invalid under 35 U.S.C. § 102(b) and/or § 103(a), these references either alone or in combination raise substantial new questions as to the patentability of claim 6. Therefore, reexamination of claim 6 of the '293 patent is proper.

2. ~~Proudfit in Combination with Other References Teach~~ All of the Limitations of Claim 6

Proudfit teaches a golf ball that exhibits the properties required by claim 6:

Claim 6	Proudfit
A golf ball according to claim 4,	See above, Sections VLD.4 to VLD.6.
wherein said inner cover layer has a thickness of about 0.050 inches,	"The thickness of the inner layer can be within the range of about 0.0250 to 0.2875 inch to provide a total diameter of the inner layer and core within the range of about 1.550 to 1.590

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Claim 6	Proudfit
	inch.” (col. 7, lines 37-40.) “The preferred dimensions are ... and inner layer thickness of 0.037 inch ...” (col. 7, lines 43-44.)
said outer cover layer has a thickness of about 0.055 inches,	“The thickness of the outer layer can be within the range of about 0.0450 to 0.0650 inch to provide a total ball diameter of 1.680 inch. The preferred dimensions are ... an outer layer thickness of 0.0525 inch ...” (col. 7, lines 40-46.)
and said golf ball has an overall diameter of 1.680 inches or more.	“The preferred dimensions are a core diameter of 1.500 inch, and inner layer thickness of 0.037 inch (inner layer diameter of 1.575 inch), and an outer layer thickness of 0.0525 inch (total ball diameter of 1.680 inch).” (col. 7, lines 43-47.)

Proudfit when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 raise substantial new questions of patentability with respect to claim 6 that were not considered during the original examination. Therefore, reexamination of claim 6 of the '293 patent is appropriate.

G. Claim 7

Claim 7 of the '293 patent is an independent claim directed to “a multi-layer golf ball” that includes a relatively hard, high-modulus, low acid ionomeric inner cover layer and a relatively soft, low modulus outer cover layer including a polyurethane material. The outer cover layer also includes dimples. The multi-layer golf ball as recited in claim 7 includes:

- (a) “a spherical core;”
- (b) “an inner cover layer molded over said spherical core to form a spherical intermediate ball said inner cover layer having...”
 - a. “a Shore D hardness of at least 60,”
 - b. “said inner cover layer comprising an ionomeric resin including no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid and”
 - c. “having a modulus of from about 15,000 to about 70,000 psi; and”
- (c) “a dimpled outer cover layer molded over said spherical intermediate ball to form a multi-layer golf ball said outer cover having ...”

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- a. "a Shore D hardness of 64 or less"
- b. "said outer cover layer comprising a polyurethane,"
- c. "said outer cover layer having a modulus in a range of about 1,000 to about 30,000 psi."

The golf ball defined by claim 7 was far from novel, well before November 9, 1995. Golf balls including each and every element recited in claim 7 were taught in prior art patents prior to the critical date.

1. Claim 7 is Anticipated by Nesbitt or in the or in the Alternative, is Obvious Over Nesbitt in view of Molitor '637

Nesbitt discloses a golf ball including "an inner layer 14 of hard, high flexural modulus resinous material" and an "outer layer or cover 16 of soft ... resin." (Nesbitt, col. 1, lines 20-25.) Nesbitt issued on February 14, 1984 and is therefore prior art to the claims of the '293 patent under 35 U.S.C. § 102(b).

One example disclosed in Nesbitt includes an inner cover of Surlyn® 1605 and an outer cover made of Surlyn® 1855. Surlyn® 1605, which has been redesignated as Surlyn® 8940 has a Shore D hardness of 65 and exhibits a flexural modulus of about 51,000 psi. (See **Exhibit I** (Product Information Sheet for Surlyn®); see also '293 patent, col. 2, lines 53-58, Table 1.) Surlyn® 1855, now designated as Surlyn® 9020 has a Shore D hardness of 55 and a flexural modulus of about 14,000 psi. (**Exhibit I**.) As Nesbitt makes clear, however, these cover materials are merely exemplary. (Nesbitt, col. 2, lines 37, 45 (stating that materials "such as" Surlyn® resins may be used); col. 3, lines 21, 25 (same).)

As a further indication that Nesbitt's disclosure was not limited to the use of Surlyn® ionomers, Nesbitt incorporates the "polymeric materials" taught by the Molitor '637 patent by

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reference.¹⁴ (Nesbitt, col. 3, lines 56-61.) Molitor '637 teaches a limited number of polymeric materials for use as golf ball outer cover layers. (Molitor '637, col. 5, lines 33-55; cols. 18-19, examples 16-19.) Therefore, Molitor's polyurethane is incorporated into Nesbitt as an outer cover layer as if it were part of Nesbitt's original disclosure.

Nesbitt teaches a golf ball having the properties required by claim 7 as illustrated by the following chart:

Claim 7	Nesbitt
A multi-layer golf ball comprising:	"The disclosure embraces a golf ball and method of making same" (Nesbitt, Abstract; FIGS 1 & 2.)
a spherical core;	"Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a solid center or core formed as a solid body of resilient polymeric material or rubber-like material in the shape of a sphere. " (Nesbitt, col. 2, lines 31-34.)
an inner cover layer molded over said spherical core to form a spherical intermediate ball,	"Disposed on the spherical center or core 12 is a first layer, lamination, ply or inner cover 14 of molded hard , highly flexural modulus resinous material...." (Nesbitt, col. 2, lines 34-37.)
said inner cover layer having a Shore D hardness of at least 60	"[I]nner cover 14 of molded hard , highly flexural modulus resinous material such as type 1605 Surlyn® marketed by E.I. DuPont de Nemours." (Nesbitt col. 2, lines 36-38.) "[A] center or core 12 ... is molded with a layer of hard, high modulus Surlyn resin , such as Surlyn type 1605..." (Nesbitt, col. 3, lines 27-29.)
	DuPont Surlyn Product Information: ¹⁵ Surlyn® 8940 (formerly 1605 (see '293 Patent, col. 2, lines 54-55)) has a Shore D hardness of 65.
said inner cover layer comprising an ionomeric	Surlyn® 1605 is a low acid ionomeric resin. Per the '293 Patent:

¹⁴ See *supra* footnote 6.

¹⁵ Attached as Exhibit I.

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Claim 7	Nesbitt
resin having no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	"Type 1605 Surlyn® (Surlyn® 8940) is a sodium ion based low acid (less than or equal to 15 weight percent methacrylic acid) ionomer resin...." ('293 patent, col. 2, lines 54-58.)
and having a modulus of from about 15,000 to about 70,000 psi; and	Surlyn® 1605 inherently exhibits the claimed modulus. "Type 1605 Surlyn (Surlyn 8940) is a sodium ion based low acid (less than or equal to 15 weight percent methacrylic acid) ionomer resin having a flexural modulus of about 51,000 psi. " ('293 patent, col. 2, lines 55-59; <i>see also</i> Surlyn® Product Information, Exhibit I).
a dimpled outer cover layer molded over said spherical intermediate ball to form a multi-layer golf ball	"An outer layer, ply, lamination or cover 16 of comparatively soft, low flexural modulus resinous material ... is then re-molded onto the inner ply or layer 14 " (Nesbitt, col. 2, lines 43-47.) "[T]he outer layer or cover 16 being of dimpled configuration.... " (Nesbitt, col. 2, lines 48-49; Fig. 2.)
said outer cover having a Shore D hardness of 64 or less	<u>Nesbitt:</u> Nesbitt teaches an inner cover made of Surlyn® 1855 (now Surlyn® 9020), which has a Shore D hardness of 55. <u>Nesbitt Incorporates the Materials of Molitor '637 by Reference:</u> "Reference is made to the application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention." (Nesbitt, col. 3, lines 54-60.) <u>Molitor '637:</u> Teaches the use of Estane 58133 in Examples 16 and 17. (Molitor '637, col. 18.) This cover material inherently has a Shore D hardness of 55. ¹⁶
said outer layer comprising a polyurethane;	<u>Nesbitt Incorporates Materials of Molitor by Reference:</u> "Reference is made to the application Ser. No. 155,658, of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for one or both layers 14 and 16." (Nesbitt, col. 3, lines 54-60.)

¹⁶ Compare Exhibit I with Exhibit J.

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Claim 7	Nesbitt
	<u>Molitor '637:</u> Teaches cover materials including "polyurethanes such as are prepared from polyols and organic polyisocyanates"; specifically Estane 58133 thermoplastic polyurethane. (Molitor '637, col. 5, lines 39-41; col. 18, lines 31-59 (examples 16 and 17).)
said outer cover layer having a modulus in a range of about 1,000 to about 30,000 psi	<u>Estane 58133 Product Information:</u> ¹⁷ Estane 58133 has a modulus of 25,000 psi. <u>Nesbitt:</u> Nesbitt's exemplary outer cover layer is made of Surlyn® 1855, which has the same hardness as Estane 58133 and has a flexural modulus of 14,000 psi.

Therefore, Nesbitt anticipates claim 7 because: (1) Nesbitt incorporates the relatively soft Estane 58133 polyurethane of Molitor '637 and (2) the Estane 58133 polyurethane material inherently has a Shore D hardness of 55, well within the claimed range. *See* M.P.E.P. §§ 2163.07 (incorporation by reference permitted); 2131.01 (multiple reference § 102 rejection appropriate when showing something in another reference is inherent).

Additionally, the alleged invention recited in claim 7 would have been obvious to those skilled in the art at the time of the alleged invention. For example, Nesbitt provides express motivation to incorporate the soft polyurethane material disclosed in Molitor '637 as the soft outer cover layer by its specific reference to the Molitor '637's "polymeric materials." (Molitor '637, col. 3, lines 51-61.)

Moreover, as recognized by the inventor of the '293 patent, golf ball designers knew that the mechanical properties of the materials used as a golf-ball cover layer were more critical to golf ball performance than the actual materials themselves. (**Exhibit G** at 334.) In the primary example taught by Nesbitt, the outer cover layer was made of Surlyn® 1855 (now Surlyn® 9020). This material had a flexural modulus of about 14,000 psi and a Shore D hardness of 55.

¹⁷ Exhibit J.

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(See **Exhibit I.**) The Estane 5833 thermoplastic polyurethane taught by Molitor '637 is likewise a relatively soft, low modulus material. For example, the Estane 58133 polyurethane has a flexural modulus of 25,000 psi and a Shore D hardness of 55. (See **Exhibit J.**) Thus, the ordinarily skilled golf ball designer would have readily appreciated the substitutability of Nesbitt's Surlyn® 1855 and Molitor '637's Estane 58133.

Prior to the alleged invention, polyurethane was known to have a number of advantageous properties for use in golf ball outer cover layers. (See, e.g., GB '196, col. 1, lines 38-44; *supra* IV.C.1.) Therefore, it would have been obvious to modify the outer cover layer of Nesbitt to include the relatively soft, low modulus Estane 58133 polyurethane taught in Molitor '637 because polyurethane was a well-known substitute to ionomer resins as a golf ball cover material and provided numerous advantages over ionomer resin cover layers.

Accordingly, Nesbitt teaches every limitation of claim 7, and thereby anticipates claim 7 under 35 U.S.C. § 102(b) and/or renders claim 7 obvious under 35 U.S.C. § 103(a) when taken in view of Molitor '637. Therefore, Nesbitt and its incorporation of Molitor '637 raise substantial new questions of patentability with respect to claim 7 that were not previously considered by the PTO. Therefore, reexamination of claim 7 of the '293 patent is appropriate.

2. Claim 7 is Obvious over Nesbitt in View of Wu

While Nesbitt discloses a particular soft, low modulus polyurethane material (i.e., Estane 58133) for use as a golf ball cover, it would have been obvious to use the polyurethane taught by Wu as a golf ball cover at the time of the alleged invention. Nesbitt teaches a multi-layer golf ball having an outer cover layer made of a soft polyurethane material, such as, for example, the Estane 58133 polyurethane taught by Molitor '637.

Wu teaches that:

The problem with SURLYN®-covered golf balls, however, is that they lack the "click" and "feel" which golfers had become

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accustomed to with balata. "Click" is the sound when the ball is hit by a golf club and "feel" is the overall sensation imparted to the golfer when the ball is hit.

It has been proposed to employ polyurethane as a cover stock for golf balls because, like SURLYN®, it has a relatively low price compared to balata and provides superior cut resistance over balata. *However, unlike SURLYN®-covered golf balls, polyurethane-covered golf balls can be made to have the "click" and "feel" of balata.*

(Wu at col. 1, lines 36-46 (emphasis added).)

Moreover, as recognized by the inventor himself, the particular materials used in the golf balls were not as important as the mechanical properties of those layers. (See Exhibit G at 334.) The Surlyn® 1855 (now Surlyn® 9020) taught in Nesbitt's primary example has a Shore D hardness of 55 and a flexural modulus of about 14,000 psi. Wu's polyurethane material has a Shore D hardness of 58 as measured on the surface of the golf ball. (Exhibit C (showing that the polyurethane material used as the outer cover layer on the Titleist Professional™ golf ball has a Shore D hardness of 58).) In addition to being soft, Wu's polyurethane is a relatively low flexural modulus material. For example, this material has a flexural modulus of about 23,000 psi as measured in accordance with ASTM standards. (Decl. of Jeffrey L. Dalton at ¶ 7.) This is very similar to the hardness of the Surlyn® 1855 used in one example taught by Nesbitt. Thus, those skilled in the art would have been led to substitute the polyurethane of Wu for the soft ionomer cover layer of Nesbitt because such would give the same or improved playability properties and would improve durability properties.

Therefore, it would have been obvious at the time of the alleged invention to modify the golf ball disclosed in Nesbitt to include an outer cover made of Wu's soft polyurethane material because it would exhibit an improved cut resistance over Surlyn or balata cover layers while providing a golf ball having the "click" and "feel" of a balata-covered ball. Given these advantages and given that the material properties are similar between the relatively soft ionomer

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of Nesbitt and the relatively soft polyurethane material taught by Wu (and used on the Titleist Professional™ golf ball), those skilled in the art would have been led to use the polyurethane material for its advantages over Surlyn. In fact, this rationale was adopted by the BPAI in a related application in affirming an Examiner's rejection of a similar claim. The BPAI held:

In applying the test for obviousness⁶ we conclude that the teachings of Wu clearly would have made it obvious at the time the invention was made to a person of ordinary skill in the art to have modified Nesbitt's golf ball by using polyurethane as the outer cover material to achieve the expected benefits therefrom taught by Wu (i.e., to have the "click" and "feel" of balata; improved shear resistance and cut resistance; durability; and resiliency). Thus, it would have been obvious to one skilled in the art to have modified Nesbitt's three-piece golf ball having a spherical core, an inner layer of type 1605 Surlyn® and an outer layer of type 1855 Surlyn® by replacing the type 1855 Surlyn® in the outer layer with polyurethane as suggested and taught by Wu.

(*Ex Parte Sullivan*, PTO Bd. Of Patent App. & Int., Jan. 30, 2004 (decision in U.S. Patent Application Serial No. 08/873,594) (**Exhibit K**).)

Therefore, it would have been obvious to modify the golf ball of Nesbitt to include an outer cover layer using the polyurethane disclosed by Wu because it provides a golf ball having a "click" and "feel" similar to balata and will have improved shear resistance and cut resistance. Thus, claim 7 is obvious under 35 U.S.C. § 103(a) over Nesbitt in view of Wu. These references raise substantial new questions of patentability that were not previously considered by the PTO.

Therefore, reexamination of claim 7 of the '293 patent is appropriate.

3. Claim 7 is Obvious over Nesbitt in view of Molitor '751

In addition to being anticipated by Nesbitt, claim 7 is also obvious under 35 U.S.C. § 103(a) over Nesbitt in view of Molitor '751. While Nesbitt describes a soft outer cover layer including a soft polyurethane material (i.e., the Estane 58133 incorporated from Molitor '637), it

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would have been obvious replace that outer cover layer with the relatively soft polyurethane outer cover layer taught by Molitor '751 for the numerous reasons provided by Molitor '751.

Molitor '751 teaches that:

It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core **a cover having a shore C hardness less than 85**, preferably 70-80, and most preferably 72-76. The novel cover of the golf ball of the invention is made of a composition comprising a blend of (1) a **thermoplastic urethane** having a shore A hardness less than 95 and (2) an ionomer having a shore D hardness greater than 55.

(Molitor '751, col. 2, lines 33-49 (emphasis added).) In explaining what a "two-piece" golf ball is, Molitor '751 teaches that:

The phrase "two piece ball" as used herein refers primarily to balls consisting of a molded core and a cover, but also **includes balls having a solid layer beneath the cover as disclosed, for example, in U.S. Pat. No. 4,431,193 to Nesbitt**, and other balls having non-wound cores.

(Molitor '751, col. 2, lines 7-12 (emphasis added).) Molitor explains that the advantages of using this cover on a two-piece golf ball, such as the golf ball of Nesbitt, include "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit ~~experienced golfers to apply spin so as to fade or draw a shot~~" while having improved puttability.

(Molitor '751, col. 2, lines 61-68.)

Molitor expresses the hardness of the cover as a Shore C hardness of less than 85, preferably 70 to 85 and most preferably 72 to 76. (Molitor '751, col. 4, lines 21-25.) Based on Callaway's own measurements, a Shore C hardness of 73 is equal to a Shore D hardness of 47. (See U.S. Patent No. 6,905,648, Table 19, **Exhibit L**.) Therefore, a cover having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 60.

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While there is no clear indication that the cover compositions disclosed in Molitor '751 have a modulus as claimed, although they are believed to have a flexural modulus within the broad ranges claimed, at very least it would have been apparent based on the teachings of Nesbitt that the outer cover should have a "soft, low modulus" polymeric material with a flexural modulus of about 14,000 psi. This low modulus material would include materials having the broad range claimed.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the outer cover layer of Nesbitt and replace it with the outer cover of Molitor '751 to provide a golf ball that exhibit "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Therefore, claim 7 is obvious under 35 U.S.C. § 103(a) over Nesbitt in view of Molitor '751. These references raise substantial new questions of patentability that were not previously considered by the PTO. Therefore, reexamination of claim 7 of the '293 patent is proper.

4. Claim 7 is Obvious Over Proudfit in View of Molitor '637

Proudfit discloses a three-piece solid golf ball that includes a core, a hard ionomer inner cover layer and a relatively soft outer cover layer made of a balata or balata-like material. (Proudfit, Abstract; col. 5, lines 43-52.) Proudfit teaches that: "A number of golfers, primarily professional and low handicap golfers, prefer balata covered balls because of the higher spin rate, control, "feel," and "click" which balata provides." (Proudfit, col. 1, lines 49-52.) While Proudfit may not disclose the use of a polyurethane outer cover, it would have been obvious to modify Proudfit to include an outer cover made of polyurethane rather than the balata material

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disclosed therein because Proudfit seeks to solve the same problems with Surlyn-covered golf balls that polyurethane had been used to solve for years.

Proudfit's teachings are illustrated in the following claim chart:

Claim 7	Proudfit						
A multi-layer golf ball comprising:	"This invention relates to golf balls, and more particularly, to a golf ball having a two-layer cover ." (col. 1, lines 11-12.)						
a spherical core;	"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (col. 7, lines 21-24; FIGS 1, 2.) "Two specific solid core compositions used with the new two-layer cover had the composition described in Table 1. One core was used in a golf ball which was designated as a 90 compression ball, and the other core was used in a golf ball which was designated as a 100 compression ball." (col. 7, lines 51-55.)						
an inner cover layer molded over said spherical core to form a spherical intermediate ball,	"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (col. 7, lines 21-24.) "The inner layer can be molded in one of two methods: 1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core. 2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core ." (col. 8, lines 32-38.)						
said inner cover layer having a Shore D hardness of at least 60	"The composition of the inner cover layer is described in Table 6." <div style="text-align: center;"> TABLE 6 <hr/> Composition of Inner Layer of Cover (Parts by Weight) <hr/> <table> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </table> <hr/> </div> (col. 8, lines 22-30.) Surlyn® 8940 has a Shore D hardness of 65; Surlyn® 9910 has a	Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Ionomer Type	Blend Ratio						
Sodium- Surlyn 8940	75%						
Zinc- Surlyn 9910	25%						

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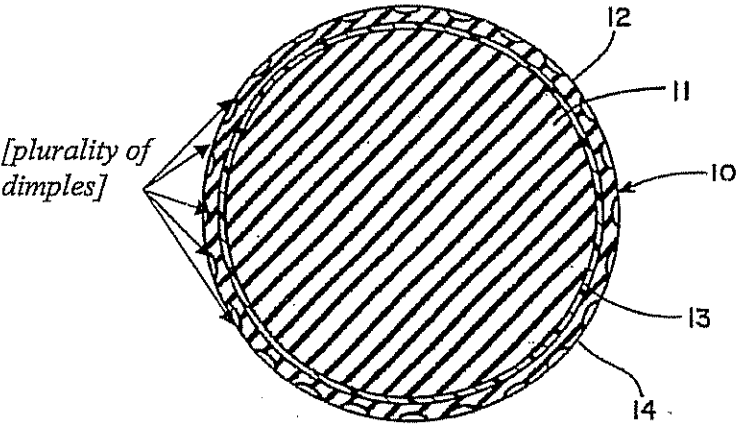
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Claim 7	Proudfit								
	Shore D hardness of 64 (Exhibit I.) Therefore, this cover blend has a hardness of 60 or more. (See Decl. of Edmund A. Hebert at ¶¶ 8-9.)								
said inner cover layer comprising an ionomeric resin having no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	<p>"The composition of the inner cover layer is described in Table 6."</p> <p style="text-align: center;">TABLE 6</p> <table> <tr> <th colspan="2">Composition of Inner Layer of Cover (Parts by Weight)</th></tr> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </table> <p>(col. 8, lines 22-30.) Surlyn® 8940 and Surlyn® 9910 are both low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid.</p>	Composition of Inner Layer of Cover (Parts by Weight)		Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Composition of Inner Layer of Cover (Parts by Weight)									
Ionomer Type	Blend Ratio								
Sodium- Surlyn 8940	75%								
Zinc- Surlyn 9910	25%								
and having a modulus of from about 15,000 to about 70,000 psi; and	<p>"The standard resins have a flexural modulus in the range of about 30,000 to about 55,000 psi as measured by ATM Method D-790. (Standard resins are referred to as "hard Surlins" in U.S. Patent No. 4,884,814.)" (col. 5, line 66-col. 6, line 1.)</p> <p>"Specific standard Surlyn resins which can be used in the inner layer include 8940 (sodium), 9910 (zinc)" (col. 6, lines 6-7.)</p> <p>"The composition of the inner cover layer is described in Table 6."</p> <p style="text-align: center;">TABLE 6</p> <table> <tr> <th colspan="2">Composition of Inner Layer of Cover (Parts by Weight)</th></tr> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </table>	Composition of Inner Layer of Cover (Parts by Weight)		Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Composition of Inner Layer of Cover (Parts by Weight)									
Ionomer Type	Blend Ratio								
Sodium- Surlyn 8940	75%								
Zinc- Surlyn 9910	25%								
	(col. 8, lines 22-30.) Therefore, the cover will inherently have a flexural modulus between 15,000 psi and 70,000 psi.								

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Claim 7	Proudfit
a dimpled outer cover layer molded over said spherical intermediate ball to form a multi-layer golf ball	<p style="text-align: center;">Fig. 1</p> 
said outer cover having a Shore D hardness of 64 or less	<p>“... an outer layer of soft material such as balata or a blend of balata and other elastomers.” (col. 5, lines 15-17.) This material inherently has a Shore D hardness of 64 or less. (See Decl. of Edmund A. Hebert at ¶ 7.)</p>
said outer layer comprising a polyurethane;	<p>“... an outer layer of soft material such as balata or a blend of balata and other elastomers.” (col. 5, lines 15-17.)</p>
said outer cover layer having a modulus in a range of about 1,000 to about 30,000 psi	<p>“The relatively soft elastomeric material of the outer layer has a flexural modulus in the range of about 20,000 to 25,000 psi, and in one specific embodiment had a flexural modulus of from 22,165 to 22,379 psi. (col. 6, lines 28-31.)</p>

While Proudfit may not expressly disclose the use of polyurethane as an outer cover material or the Shore D hardness, it would have been obvious given that “[t]he patent literature is replete with proposed cover formulations seeking to improve upon the balata and ionomer covers [including] [p]olyurethane....” (Molitor ’751, col. 2, lines 9-12.) Soft, low flexural modulus polyurethane had been known to be a substitute for balata covers for decades prior to the filing of the ’293 patent.

For example, Molitor ’637 discloses the use of polyurethane material as a soft polymeric material that may be used as an outer cover layer of a golf ball. (See Molitor ’637, col. 5, lines

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33-41; col. 18, Examples 16 and 17.) One exemplary polyurethane material used by Molitor as an outer cover material includes Estane 58133.

As was readily appreciated by those skilled in the art—including the inventor of the '293 patent—the types of materials used in a golf ball are not as critical to a golf ball's playability as are the mechanical properties of those materials. (See **Exhibit G** at 334.) The Estane 58133 is a relatively soft material and has a Shore D hardness of 55 and is also a low flexural modulus material having a modulus of about 25,000 psi. (See **Exhibit J**.) Proudfit's outer cover layer is also relatively soft and has a flexural modulus between 20,000 and 25,000 psi. (Proudfit, col. 6, lines 28-31.) Due to the similarities between these two materials, the ordinarily skilled artisan would have recognized the substitutability of these two materials as well as the benefits of using polyurethane as an outer cover material.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the balata-based outer cover layer of Proudfit to include the Estane polyurethane outer cover layer of Molitor '637 because such was a well known substitute for balata and gives a number of advantages over balata as would have been readily appreciated by those skilled in the art. These advantages include: (1) improved processability; (2) improved durability; (3) cost-effectiveness; and (4) having a good "click" and "feel." Additionally, the polyurethane material taught by Molitor '637 and the synthetic balata material taught by Proudfit have similar

~~mechanical properties, such as flexural modulus. All of this would have led one of ordinary skill~~
 in the art to replace the soft balata outer cover layer of Proudfit with the soft polyurethane outer cover layer of Molitor '637 at the time of the alleged invention.

Therefore, Proudfit when taken in view of Molitor '637 render claim 7 obvious under 35 U.S.C. § 103(a). Because these references raise substantial new questions of patentability that were not previously considered by the PTO, reexamination of claim 7 of the '293 patent is proper.

5. Claim 7 is Obvious Over Proudfit in View of Wu

As discussed above, Proudfit teaches a golf ball having a two-piece cover including a hard, ionomeric inner cover layer and a soft balata outer cover layer. While Proudfit may not disclose the use of a polyurethane material as the outer cover layer of the golf ball, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the balata cover layer of Proudfit to include the soft polyurethane material taught by Wu.

Wu teaches that:

The problem with SURLYN®-covered golf balls, however, is that they lack the "click" and "feel" which golfers had become accustomed to with balata. "Click" is the sound when the ball is hit by a golf club and "feel" is the overall sensation imparted to the golfer when the ball is hit.

It has been proposed to employ polyurethane as a cover stock for golf balls because, like SURLYN®, it has a relatively low price compared to balata and provides superior cut resistance over balata. However, unlike SURLYN®-covered golf balls, polyurethane-covered golf balls can be made to have the "click" and "feel" of balata.

(Wu, col. 1, lines 36-46 (emphasis added).) Based on Wu's teachings one of ordinary skill in the art would have recognized the substitutability of polyurethane and balata materials and the advantages of making such a substitution. These advantages include (1) low price when compared to balata; (2) better cut resistance when compared to balata; and (3) a "click" and "feel" that is similar to balata.

As the inventor of the '293 patent had indicated in a 1994 publication, golf ball designers understood that the mechanical properties of the layers impacted the performance of the golf ball more than the materials themselves. (Exhibit G at 334.) Additionally, Wu's polyurethane material inherently has a flexural modulus of about 23,000 psi as measured in accordance with ASTM standards. (Decl. of Jeffrey L. Dalton at ¶ 7.) Proudfit's outer cover layer material has a flexural modulus of between about 20,000 and 25,000 psi. (Proudfit, col. 6, lines 28-31.) Thus,

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one of ordinary skill in the art would have appreciated that using Wu's polyurethane as Proudfit's outer cover layer would have provided similar playability characteristics as well as numerous advantages including, for example, durability.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the alleged invention to modify Proudfit's golf ball by replacing the balata outer cover with an outer cover made of soft polyurethane material because polyurethane provides numerous advantages over balata while exhibiting the "click" and "feel" of balata. Therefore, claim 7 is obvious under 35 U.S.C. § 103(a) over Proudfit in view of Wu. Because these references raise substantial new questions of patentability that were not previously considered by the PTO, reexamination of claim 7 of the '293 patent is proper.

6. Claim 7 is Obvious Over Proudfit in View of Molitor '751

As discussed above, Proudfit teaches a golf ball having a two-piece cover including a hard, ionomeric inner cover layer and a soft balata outer cover layer. While Proudfit may not disclose the use of a polyurethane material as the outer cover layer for a golf ball, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Proudfit's golf ball by replacing the soft balata outer cover layer of Proudfit to include an outer cover layer including a soft polyurethane material as taught by Molitor '751.

~~Molitor '751 teaches that:~~

It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core a **cover having a shore C hardness less than 85**, preferably 70-80, and most preferably 72-76. The novel cover of the golf ball of the invention is made of a composition comprising a blend of (1) a **thermoplastic urethane** having a shore A hardness less than 95 and (2) an ionomer having a shore D hardness greater than 55.

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(Molitor '751, col. 2, lines 33-49 (emphasis added).) In explaining what a "two-piece" golf ball is, Molitor '751 teaches that:

The phrase "two piece ball" as used herein refers primarily to balls consisting of a molded core and a cover, but also **includes balls having a solid layer beneath the cover as disclosed, for example, in U.S. Pat. No. 4,431,193 to Nesbitt, and other balls having non-wound cores.**

(Molitor '751, col. 2, lines 7-12 (emphasis added).) Proudfit teaches a "two-piece" golf ball that fits within this definition. Molitor '751 explains that the advantages of using a cover including a soft polyurethane material on a two-piece golf ball, such as the golf ball of Proudfit, include "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Molitor expresses the hardness of the cover as a Shore C hardness of less than 85, preferably 70 to 85 and most preferably 72 to 76. (Molitor '751, col. 4, lines 21-25.) Based on Callaway's own measurements, a Shore C hardness of 73 is equal to a Shore D hardness of 47. (See U.S. Patent No. 6,905,648, Table 19 (**Exhibit L**).) Therefore, a cover having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 64.

While there is no clear indication that the cover compositions disclosed in Molitor '751 have a modulus as claimed, although they are believed to have a flexural modulus within the broad ranges claimed, at very least it would have been apparent based on the teachings of Nesbitt that the outer cover should have a "soft, low modulus" polymeric material. This low modulus material would include materials having a flexural modulus within the broad range claimed.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the soft balata outer cover layer of Proudfit with the soft polyurethane outer

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cover layer as taught by Molitor '751 to provide a golf ball that has "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Therefore, Proudfit when taken in view of Molitor '751 renders claim 7 obvious under 35 U.S.C. § 103(a). Because these references raise substantial new questions of patentability that were not previously considered by the PTO, reexamination of claim 7 of the '293 patent is proper.

H. Claim 8

Claim 8 of the '293 patent depends from claim 7. Claim 8 further limits the golf ball to a golf ball having an inner cover layer that has a higher Shore D hardness than the outer cover layer. Golf balls including soft outer cover layers over harder inner cover layers were well known in the prior art at the time of the alleged invention.

1. Nesbitt Teaches all of the Elements of Claim 8

Nesbitt teaches each element of claim 8 as shown by the following chart:

Claim 8	Nesbitt
The multi-layer golf ball of claim 7	See sections VI.G.1 to VI.G.3 above.
wherein the Shore D hardness of said outer cover layer is less than the Shore D hardness of said inner cover layer.	"The disclosure embraces a golf ball and method of making same wherein the golf ball has a solid ... resilient center or core, and a multilayer cover construction, which involves a first layer or ply of molded hard, high flexural modulus resinous material on the core, and a second or cover layer of soft, low flexural modulus resinous material molded over the first layer to form a finished golf ball." (Nesbitt, Abstract.)

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Therefore, Nesbitt teaches each and every element of claim 8 and anticipates claim 8 under 35 U.S.C. § 102(b). Alternatively, claim 8 is obvious over:

- Nesbitt in view of Molitor '637;
- Nesbitt in view of Wu; and/or
- Nesbitt in view of Molitor '751.

Because Nesbitt and/or Nesbitt when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 render claim 8 invalid under 35 U.S.C. § 102(b) and/or § 103(a), these references either alone or in combination raise substantial new questions as to the patentability of claim 8. Therefore, reexamination of claim 8 of the '293 patent is proper.

2. Proudfit in Combination with Other References Teach All of the Limitations of Claim 8

Proudfit teaches a golf ball that exhibits the properties required by claim 8:

Claim 8	Nesbitt
The multi-layer golf ball of claim 7	See sections VI.G.4 to VI.G.6 above.
wherein the Shore D hardness of said outer cover layer is less than the Shore D hardness of said inner cover layer.	"This invention relates to golf balls, and, more particularly, to a golf ball having a two-layer cover. The inner layer is formed from hard resin material such as ionomer resin, and the outer layer is formed from soft material such as balata or a blend of balata and other elastomers." (col. 1, lines 11-16.)

Proudfit when taken in view of any one of Molitor '637, Wu, and/or Molitor '751 raise substantial new questions of patentability with respect to claim 8 that were not previously considered by the PTO. Therefore, reexamination of claim 8 of the '293 patent is proper.

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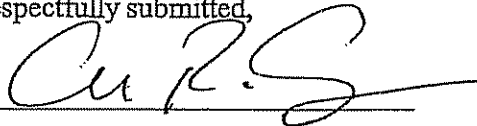
VII. CONCLUSION

For the above reasons, it is respectfully submitted that reexamination of claims 1-8 of the '293 patent is appropriate in light of the newly cited prior art patents and printed publications.

Dated: 4/13/06

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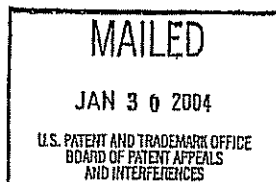
EXHIBIT C

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES



Ex parte MICHAEL J. SULLIVAN

Appeal No. 2004-0242
Application No. 09/873,594

ON BRIEF

Before GARRIS, NASE, and CRAWFORD, Administrative Patent Judges.
NASE, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1, 4 to 7, 10 to 13 and 16 to 18, which are all of the claims pending in this application.

We AFFIRM.

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BACKGROUND

The appellant's invention relates to golf balls and, more particularly, to improved standard and oversized golf balls comprising multi-layer covers which have a comparatively hard inner layer and a relatively soft outer layer such as that produced by the use of a polyurethane based outer layer. The improved multi-layer golf balls provide for enhanced distance and durability properties over single layer cover golf balls while at the same time offering enhanced "feel" and spin characteristics generally associated with soft balata and balata-like covers of the prior art (specification, p. 1). A copy of the claims under appeal is set forth in the appendix to the appellant's brief.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Nesbitt	4,431,193	Feb. 14, 1984
Wu	5,334,673	Aug. 2, 1994

Claims 1, 4 to 7, 10 to 13 and 16 to 18 stand rejected under 35 U.S.C. § 103 as being unpatentable over Nesbitt in view of Wu.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted rejections, we make reference to the answer

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(Paper No. 15, mailed June 16, 2003) for the examiner's complete reasoning in support of the rejections, and to the brief (Paper No. 14, filed March 21, 2003) for the appellant's arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellant's specification and claims, to the applied prior art references, and to the respective positions articulated by the appellant and the examiner. As a consequence of our review, we make the determinations which follow.

Claimed Subject Matter

The independent claims on appeal read as follows:

1. A golf ball comprising:
a core;
an inner cover layer disposed on said core and having a Shore D hardness of 60, [sic] or greater [,] a thickness of from about 0.10 to about 0.01 inches, and comprising a low acid ionomer resin containing no more than 16% by weight of an alpha, beta unsaturated carboxylic acid; and
an outer cover layer comprising a polyurethane material.
7. A golf ball comprising:
a core;
an inner cover layer disposed about said core and having a thickness of from about 0.10 to about 0.01 inches, and comprising an ionomeric resin including no more than 16 % by weight of an alpha, beta-unsaturated carboxylic acid and having a modulus of from about 15,000 to about 70,000 psi; and
an outer cover layer disposed about said inner cover layer comprising a polyurethane material.

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13. A golf ball comprising;
a core;
an inner cover layer disposed on said core comprising an ionomer resin;
and
an outer cover layer disposed about said inner cover layer comprising a polyurethane material.

Teachings of Nesbitt

Nesbitt's invention relates to a golf ball and more particularly to a cover construction for a golf ball. In the BACKGROUND ART section of the patent (column 1, lines 9-33), Nesbitt teaches:

Golf balls having a cover material marketed under the trademark "Surlyn" by E. I. du Pont de Nemours and Company of Wilmington, Del., are known in the art and such cover compositions generally comprise a copolymer of an olefin and at least one unsaturated monocarboxylic acid. Conventional two-piece golf balls are comprised of a solid resilient center or core with molded Surlyn covers. The cover used is normally a hard, high flexural modulus Surlyn resin in order to produce a gain in the coefficient of restitution over that of the center or core.

In a conventional two-piece golf ball, a hard, high flexural modulus Surlyn resin is molded over a resilient center or core. The hard, highly flexural modulus Surlyn resin for the cover of a two-piece golf ball is desirable as it develops the greatest hoop stress and consequently the greatest coefficient of restitution.

A two-piece golf ball having a hard, Surlyn resin cover however does not have the "feel" or playing characteristics associated with softer balata covered golf balls. Heretofore balata covered golf balls have been preferred by most golf professionals. If a golf ball has a cover of soft, low flexural modulus Surlyn resin molded directly over a center or core, it is found that little or no gain in coefficient of restitution is obtained.

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Nesbitt then teaches in the DISCLOSURE OF THE INVENTION section of the patent (column 1, line 36, to column 2, line 9) that:

In accordance with the present invention there is provided a golf ball having a multilayer or two-ply cover construction for a solid resilient center or core wherein the multilayer cover construction involves two stage molded cover compositions over a solid center or core of resilient polymeric material wherein an increased coefficient of restitution is attained and wherein the "feel" or playing characteristics are attained similar to those derived from a balata covered golf ball.

The invention embraces a golf ball and method of making same wherein the ball has a solid center or core of resilient polymeric or similar material covered by a first layer or ply of molded hard, highly flexural modulus resinous material or of cellular or foam composition which has a high coefficient of restitution.

The first layer or ply is provided with a second or cover layer of a comparatively soft, low flexural modulus resinous material or of cellular or foam composition molded over the first layer and core or center assembly. Such golf ball has the "feel" and playing characteristics simulating those of a softer balata covered golf ball.

Through the use of the first ply or layer of hard, high flexural modulus resinous material on the core or center, a maximum coefficient of restitution may be attained. The resinous material for the first ply or layer may be one type of Surlyn marketed by E. I. du Pont de Nemours and Company of Wilmington, Del., and the other ply or cover layer may be of a different type of Surlyn resin also marketed by the same company.

The three-piece golf ball of the invention provides a golf ball in which the coefficient of restitution of the golf ball closely approaches or attains that which provides the maximum initial velocity permitted by the United States Golf Association Rules of two hundred fifty feet per second with a maximum tolerance of two percent, which velocity may be readily attained and the playing characteristics or "feel" associated with a balata covered ball secured while maintaining a total weight of the golf ball not exceeding 1.620 ounces without sacrificing any advantages of a golf ball having a standard Surlyn cover of the prior art or a golf ball having a softer balata cover.

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In the BEST MODE FOR CARRYING OUT THE INVENTION section of the patent (column 2, line 31, to column 3, line 50), Nesblitt teaches:

Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a solid center or core 12 formed as a solid body of resilient polymeric material or rubber-like material in the shape of a sphere. Disposed on the spherical center or core 12 is a first layer, lamination, ply or inner cover 14 of molded hard, highly flexural modulus resinous material such as type 1605 Surlyn marketed by E. I. du Pont de Nemours and Company, Wilmington, Del.⁽¹⁾

This material of the inner layer 14 being a hard, high flexural modulus resin produces a substantial gain of coefficient of restitution over the coefficient of restitution of the core or center. An outer layer, ply, lamination or cover 16 of comparatively soft, low flexural modulus resinous material such as type 1855 Surlyn marketed by E. I. du Pont de Nemours and Company⁽²⁾ is then re-molded onto the inner ply or layer 14, the outer surface of the outer layer or cover 16 being of dimpled configuration providing a finished three-piece golf ball.

According to the United States Golf Association Rules, the minimum diameter prescribed for a golf ball is 1.680 inches and the maximum weight prescribed for a golf ball is 1.620 ounces. It is therefore desirable to produce a golf ball having an improved coefficient of restitution to attain an initial velocity for the golf ball approaching the maximum velocity limit of 255 feet per second, the maximum limit provided by the United States Golf Association Rules.

The hard, high flexural modulus resin is employed to increase the coefficient of restitution in order to attain or approach the maximum initial velocity for the golf ball. The use of a soft low flexural modulus resin provides little or no gain in the coefficient of restitution and may tend to reduce the coefficient of restitution thereby adversely affecting the initial velocity factor.

¹ As set forth on page 3 of the appellant's specification Type 1605 Surlyn[®] (now designated Surlyn[®] 8940) is a sodium ion based low acid (less than or equal to 15 weight percent methacrylic acid) ionomer resin having a flexural modulus of about 51,000 psi.

² As set forth on page 4 of the appellant's specification Type 1855 Surlyn[®] (now designated Surlyn[®] 8020) is a zinc ion based low acid (10 weight percent methacrylic acid) ionomer resin having a flexural modulus of about 14,000 psi.

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In producing the golf ball of the invention, the density of the center or core may be varied and the relative thicknesses of the layers, plies or laminations 14 and 16 may be varied within limits so that the golf ball weight does not exceed 1.620 ounces, the minimum diameter not less than 1.680 inches, and the ball be capable of an initial velocity approaching 255 feet per second. However, the finished golf ball may be of larger diameter providing the total weight of the ball does not exceed 1.620 ounces.

Thus, by varying the density of the center or core 12 and varying the thicknesses of the plies or layers 14 and 16 of the cover construction, a golf ball may be produced having a total weight not exceeding 1.620 ounces and a minimum diameter of 1.680 inches and having a comparatively high coefficient of restitution, the ball closely approaching or attaining in play the maximum permitted initial velocity of 255 feet per second.

In the golf ball of the invention the thickness of the inner layer or ply 14 and the thickness of the outer layer or ply 16 may be varied to secure the advantages herein mentioned. It is found that the inner layer 14 of hard, high flexural modulus resinous material, such as Surlyn resin type 1605, is preferably of a thickness in a range of 0.020 inches and 0.070 inches. The thickness of the outer layer or cover 16 of soft, low flexural modulus resin, such as Surlyn type 1855, may be in a range of 0.020 inches and 0.100 inches.

For example, a center or core 12 having a 0.770 coefficient of restitution is molded with a layer of hard, high modulus Surlyn resin, such as Surlyn type 1605, to form a spherical body of a diameter of about 1.565 inches. This spherical body comprising the core or center 12 and layer 14 of the hard, high modulus Surlyn resin has a coefficient of restitution of 0.800 or more.

This center or core 12 and inner layer 14 of hard resinous material in the form of a sphere is then re-molded into a dimpled golf ball of a diameter of 1.680 inches minimum with an outer or cover layer 16 of a soft, low flexural modulus resin such as Surlyn type 1855. The outer layer of the soft resin is of a thickness of 0.0575 inches. The soft Surlyn resin cover would have about the same thickness and shore hardness of a balata covered golf ball and would have the advantageous "feel" and playing characteristics of a balata covered golf ball.

It is to be understood that the golf ball of the invention may be made of a diameter greater than 1.680 inches without exceeding the total weight of 1.620

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ounces by varying the thickness of the inner layer or ply 14 and the outer cover layer or ply 16 and secure desired "feel" and playing characteristics.

Teachings of Wu

Wu's invention relates to golf balls and more particularly to polyurethane covered golf balls made from a polyurethane composition of a polyurethane prepolymer cured with a slow-reacting curing agent selected from the group of slow-reacting polyamine curing agents and difunctional glycols. Wu states (column 1, lines 11-14) that such a golf ball has improved resiliency and shear resistance over golf balls made from conventional polyurethane formulations. Wu teaches (column 1, line 15, to column 2, line 44) that:

Conventionally, golf balls are made by molding a cover about a core that is either a solid one-piece core or a wound core made by winding thin elastic thread about a center. The center is either a solid mass or a liquid-filled envelope which has been frozen prior to winding the thread therearound. Golf balls made from a solid core are referred to conventionally as two-piece balls while those with wound cores are referred to as three-piece balls. Attempts have been made to make a one-piece golf ball, i.e. a solid homogeneous golf ball; however, to date no commercially acceptable one-piece golf ball has been made.

Balata had been used as the primary material for covers of golf balls until the 1960's when SURLYN®, an ionomeric resin made by E.I. duPont de Nemours & Co., was introduced to the golf industry. SURLYN® costs less than balata and has a better cut resistance than balata. At the present time, SURLYN® is used as the primary source of cover stock for two-piece golf balls. The problem with SURLYN®-covered golf balls, however, is that they lack the "click" and "feel" which golfers had become accustomed to with balata. "Click" is the sound made when the ball is hit by a golf club while "feel" is the overall sensation imparted to the golfer when the ball is hit.

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It has been proposed to employ polyurethane as a cover stock for golf balls because, like SURLYN®, it has a relatively low price compared to balata and provides superior cut resistance over balata. However, unlike SURLYN®-covered golf balls, polyurethane-covered golf balls can be made to have the "click" and "feel" of balata.

It has now been discovered that a polyurethane prepolymer cured with a slow-reacting curing agent selected from the group of slow-reacting polyamine curing agents or difunctional glycols produces a golf ball cover that has good durability and performance. Golf balls made in accordance with the present invention have been found to have improved shear resistance and cut resistance compared to golf balls having covers made from either balata or SURLYN®.

Broadly, the present invention is a golf ball product made from a polyurethane prepolymer cured with a slow-reacting curing agent selected from the group of slow-reacting polyamine curing agents or difunctional glycols. The term "golf ball product" as used in the specification and claims means a cover, a core, a center or a one-piece golf ball. The cover of a golf ball made in accordance with the present invention has been found to have good shear resistance, cut resistance, durability and resiliency. Preferably, the polyurethane composition of the present invention is used to make the cover of a golf ball.

The examiner's rejection

In the rejection of claims 1, 4 to 7, 10 to 13 and 16 to 18 under 35 U.S.C. § 103 (answer, p. 3), the examiner ascertained³ that Nesbitt discloses all of the claimed subject matter except for the outer cover of the golf ball comprising a polyurethane material. The examiner, in essence, concluded that in view of the teachings of Wu it

³ After the scope and content of the prior art are determined, the differences between the prior art and the claims at issue are to be ascertained. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966).

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would have been obvious to one skilled in the art to have modified Nesbitt's golf ball by using polyurethane as the outer cover material to increase the durability of the golf ball.

The appellant's argument

The appellant argues (brief, pp. 4-7) that the rejection under 35 U.S.C. § 103 is erroneous since the applied prior art, absent the use of impermissible hindsight⁴, does not suggest the subject matter of independent claims 1, 7 and 13. In the appellant's view there is no motivation⁵ in the applied prior art that would have made it obvious to one of ordinary skill in the art to have modified the golf ball of Nesbitt to arrive at the subject matter of independent claims 1, 7 and 13.

⁴ The use of hindsight knowledge derived from the appellant's own disclosure to support an obviousness rejection under 35 U.S.C. § 103 is impermissible. *See, for example, W. L. Gore and Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983), *cert. denied*, 489 U.S. 851 (1984).

⁵ Most if not all inventions arise from a combination of old elements. *See In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998). Thus, every element of a claimed invention may often be found in the prior art. *See id.* However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. *See id.* Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the appellant. *See In re Dance*, 180 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998); *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

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Our Determination

In applying the test for obviousness⁶ we conclude that the teachings of Wu clearly would have made it obvious at the time the invention was made to a person of ordinary skill in the art to have modified Nesbitt's golf ball by using polyurethane as the outer cover material to achieve the expected benefits therefrom taught by Wu (i.e., to have the "click" and "feel" of balata; improved shear resistance and cut resistance; durability; and resiliency). Thus, it would have been obvious to one skilled in the art to have modified Nesbitt's three-piece golf ball having a spherical core, an inner layer of type 1605 Surlyn® and an outer layer of type 1855 Surlyn® by replacing the type 1855 Surlyn® in the outer layer with polyurethane as suggested and taught by Wu. Therefore, the teachings of the applied prior art alone (i.e., without the use of impermissible hindsight) are suggestive of the subject matter of independent claims 1, 7 and 13.

In view of our determination above we disagree with the appellant's argument that the rejection under 35 U.S.C. § 103 is erroneous. While the appellant has correctly pointed out the deficiencies of both Nesbitt and Wu on an individual basis, nonobviousness cannot be established by attacking the references individually when

⁶ The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art. See *In re Young*, 927 F.2d 588, 591, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991) and *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981).

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the rejection is predicated upon a combination of prior art disclosures. See In re Merck & Co. Inc., 800 F.2d 1091, 1097, 231 USPQ 375, 380 (Fed. Cir. 1986). In our view, the combined teachings of Nesblitt and Wu are clearly suggestive of the claimed subject matter as set forth above. Lastly, we incorporate the examiner's response to the appellant's argument (answer, pp. 4-7) as our own.

For the reasons set forth above, the decision of the examiner to reject independent claims 1, 7 and 13, and claims 4 to 6, 10 to 12 and 16 to 18 dependent thereon, under 35 U.S.C. § 103 is affirmed.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1, 4 to 7, 10 to 13 and 16 to 18 under 35 U.S.C. § 103 is affirmed.

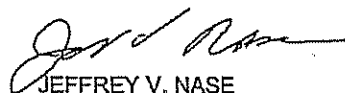
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No time period for taking any subsequent action in connection with this appeal
may be extended under 37 CFR § 1.136(a).

AFFIRMED


BRADLEY R. GARRISS
Administrative Patent Judge


JEFFREY V. NASE
Administrative Patent Judge

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CRAWFORD, Administrative Patent Judge. Dissenting.

I respectfully dissent.

Nesbitt teaches (col. 2, lines 31 to 50) that a three component golf ball having a inner cover comprised of a hard Surlyn and an outer cover of soft Surlyn. Nesbitt teaches that because the inner cover is comprised of hard Surlyn, it increases the coefficient of restitution of the golf ball (col. 2, lines 59 to 63) and because the outer cover is comprised of a soft Surlyn, the golf ball has the feel of a golf ball having a balata cover (col. 1, lines 51 to 56).

Wu discloses a two component golf ball having one cover comprised of polyurethane and teaches that the polyurethane cover improves the shear resistance and cut resistance and improves the durability and resiliency of the golf ball (col. 2, lines 24 to 42).

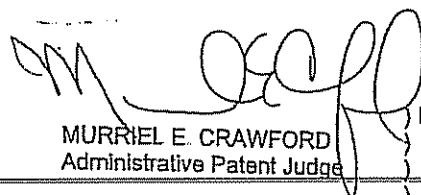
In my opinion, there is no motivation to combine the teachings of Nesbitt and Wu to arrive at the claimed invention of the appealed claims. While Wu does indeed teach the advantages of a polyurethane cover in a two component golf ball, Wu teaches nothing about the advantages of a polyurethane outer cover in three component golf

Appeal No. 2004-0242
Application No. 09/873,594

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balls. In addition, Wu teaches nothing about the use of a polyurethane outer cover in conjunction with a Surlyn inner cover. Even though Nesbitt teaches that the inner cover layer provides an increased coefficient of restitution when used in conjunction with a Surlin outer cover, there is no teaching in Nesbitt directed to the characteristics of the inner cover layer when used with outer cover layer made of other materials such as polyurethane.

For the foregoing reasons, it is my opinion that the examiner has not established a prima facie case of obviousness regarding the appealed claims.



MURRIEL E. CRAWFORD
Administrative Patent Judge

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AND
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Appeal No. 2004-0242
Application No. 09/873,594

Page 16

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EXHIBIT D



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UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
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 P.O. Box 1450
 Alexandria, Virginia 22313-1450
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
95/000,071	01/26/2005	6330941	790063.00072	7134
7590	06/09/2005		EXAMINER	
McKenna Long & Aldridge LLP 1900 K Street, NW Washington, DC 20006			ART UNIT	PAPER NUMBER

DATE MAILED: 06/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.



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Paper No. ____

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JUN 09 2005

REEXAM UNIT

In re Dieter Guldenfels
Reexamination Proceeding
Control No.: 95/000,071
Filed: January 26, 2005
For: U.S. Patent No.: 6,330,941

:
: DECISION DISMISSING
: PETITION TO SUSPEND
: REEXAMINATION
: PROCEEDINGS
:

The above reexamination proceeding is before the Office of Patent Legal Administration for consideration of the April 21, 2005 petition by the patent owner to suspend the instant *inter partes* reexamination proceeding pursuant to 37 CFR 1.987.

REVIEW OF FACTS

1. U.S. Patent No. 6,330,941 (hereinafter, the '941 patent) issued on December 18, 2001.
2. The patent owner, Hasabit Belting, filed suit (Civil Action No. 03-185JJJ) in the United States District Court for the District of Delaware, alleging that Rexnord Industries (the real party in interest for the instant request for reexamination), willfully infringed the '941 patent by offering to sell radius belt articles of manufacture whose design meets the claims of the '941 patent.
3. The patent owner entered a demand for trial by jury with the District Court against Rexnord on December 22, 2003.
4. A Markman claim construction order was issued by the District Court on October 15, 2004.
5. A request for reexamination, assigned control No. 90/000,071, was filed by a third party requester on behalf of Rexnord on January 26, 2005.
6. Reexamination was ordered for the '0071 reexamination proceeding on April 5, 2005.
7. A non-final Office action was mailed in the '0071 reexamination proceeding on April 5, 2005.

Reexamination Control No. 95/000,071

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8. The present petition to suspend the instant *inter partes* reexamination proceeding pursuant to 37 CFR 1.987 was received on April 21, 2005.
9. A petition for extension of time was received from the patent owner on June 1, 2005.
10. A denial of extension of time in response to the petition for extension of time was mailed on June 6, 2005.
11. The trial in the United States District Court for the District of Delaware remains in progress.

**DECISION DISMISSING THE PETITION TO SUSPEND
THE *INTER PARTES* REEXAMINATION PROCEEDING**

1. 37 CFR 1.987 provides that "[I]f a patent in the process of *inter partes* reexamination is or becomes involved in litigation, the Director shall determine whether or not to suspend the *inter partes* reexamination proceeding." Thus, 37 CFR 1.987 provides authority for suspension of an *inter partes* reexamination proceeding where the patent being reexamined "is or becomes involved in litigation." The mechanism for requesting such a suspension, however, is not provided by the rules. Accordingly, the present petition is taken as a petition under 37 CFR 1.182.

The fee set forth in 37 CFR 1.17(f) for a \$1.182 petition is \$400, while the Office fee records (and the Fee Transmittal form submitted with the petition) show a payment of \$130. The additional required fee of \$270 is being charged to petitioner's Deposit Account 50-0911 pursuant to the authorization for same in the Fee Transmittal form submitted with the petition.

2. While there is no mechanism for requesting a suspension of action in a reexamination proceeding, 37 CFR 1.103 provides such a mechanism for requesting a suspension of action in an application. Accordingly, the requirements for a suspension in a reexamination proceeding will be applied analogously to the requirements of 37 CFR 1.103(a).

3. 37 CFR 1.103(a) provides that "[t]he Office will not suspend action if a reply by applicant to an Office action is outstanding." Also, MPEP 2686.01 provides, for a suspension based upon the existence of a proceeding as to the patent being reexamined other than the reexamination, that a "[s]uspension will not be granted when there is an outstanding Office action." In the present instance, the patent owner is requesting suspension based on a litigation proceeding as to the '941 patent; yet, the patent owner has not responded to the non-final Office action of April 5, 2005. Thus, a response to the non-final Office action is still outstanding, and the petition must be dismissed.

4. 37 CFR 1.103(a)(1) requires that "a showing of good and sufficient cause for suspension of action" must be provided for the grant of a petition to suspend. Petitioner argues that there is good cause for the Director to suspend the reexamination proceedings because:

- A) The Delaware court is the best forum to evaluate the deposition of the inventor on one of the prior art references.
- B) The patent owner is entitled to a jury trial to decide the many factual issues not available in a reexamination proceeding.
- C) The litigation has advanced significantly, and the jury trial is at too late a stage for a separate parallel reexamination to begin.

The first two reasons for suspension proffered by the petitioner are that the Delaware District Court proceedings should proceed to provide the best evaluation of evidence and to decide factual issues outside the province of reexamination. In response, it is first observed that the patent owner does not lose the right to the evaluation and decision by the District Court. The reexamination proceedings do not terminate or suspend the ongoing proceedings in the Delaware court; rather, the reexamination and litigation proceeding continue concurrently. It is true that the Office may address factual issues prior to the jury trial doing so; however, the statute recognizes the propriety of the Office addressing issues prior to a federal court doing so. This result is a natural consequence of 35 U.S.C. 318 which permits (in a situation where "the interests of justice" would be served) the patent owner of a patent undergoing *inter partes* reexamination to "obtain a stay of any pending litigation which involves an issue of patentability of any claims of the patent which are the subject of the *inter partes* reexamination order."

As to the absence of the jury trial in the reexamination proceeding, *Joy Technologies Inc. v. Manbeck*, 959 F.2d 226, 22 USPQ2d 1153 (Fed. Cir. 1992) has sanctioned the absence of a right to a jury with respect to a determination of patent validity in a reexamination proceeding. The Federal Circuit stated in *Joy*:

"We conclude... that the *Granfinanciera* decision affirms the basic underpinning of *Patlex*, viz, that cases involving 'public rights' may constitutionally be adjudicated by legislative courts and administrative agencies without implicating the Seventh Amendment right to jury trial. The *Patlex* court stated that the issuance of a valid patent is primarily a public concern and involves a 'right that can only be conferred by the government' even though validity often is brought into question in disputes between private parties. 758 F.2d at 604, 225 USPQ at 250."

With respect to what is the best forum to evaluate the evidence, it is to be noted that the Office possesses a combination of legal and technical expertise unique to patents. In addition, the standards of review differ for the Office forum and the litigation forum, such that the two forums are not duplicative, and, further, claim construction may vary. It is thus in the public interest that both reexamination and litigation continue at the same time for a patent. In *Ethicon v. Quigg*, 849 F.2d 1422, 7 USPQ2d 1152 (Fed. Cir. 1988), the Office provided a suspension of a reexamination proceeding in the face of ongoing litigation in a federal court, and the Federal Circuit voided that attempt. The Federal Circuit noted:

"The district court thought that one of the purposes of the legislation was to avoid duplication of efforts by the PTO and the courts. 5 USPQ2d at 1141. Nothing in the statute or legislative history supports this and the Commissioner suggests no other authority for the proposition. **In the first place, the PTO's expertise does not exist elsewhere.** Secondly, precise duplication of effort does not occur because the PTO and the courts employ **different standards of proof** when considering validity..." [849 F.2d at 1427, 7 USPQ2d at 1155][Emphasis added]

The *Ethicon* court noted that district courts and the Office use different standards of proof in determining invalidity, and thus, on the same evidence, could quite correctly come to different conclusions. Specifically, invalidity in a district court must be shown by

"clear and convincing" evidence, whereas in the Office, it is sufficient to show nonpatentability by a "preponderance of evidence." Since the "clear and convincing" standard is more difficult to satisfy than the "preponderance" standard, claims held valid by the courts may be rejected in reexamination, were sufficient basis is present.

There is also a difference in claim construction. Because a patent owner can amend (the claims, the overall specification, and the drawings) in reexamination, the Office can make use of a broader claim interpretation in applying the patents and printed publications than that employed by the courts. This can be observed from the Federal Circuit's decision in *In re American Academy of Science Tech Center*, 70 USPQ2d 1827 (Fed. Cir. 2004), where the Court rejected *American Academy's* arguments for a narrow claim interpretation in a reexamination proceeding. The Federal Circuit took into account the specification and prosecution history, but said claims should be given "their broadest reasonable interpretation" during examination and reexamination in the Office "because the applicant has the opportunity to amend the claims to obtain more precise claim coverage."

Thus, as to the best forum to evaluate the evidence, both the Office and the courts possess advantages and disadvantages, and it is in the public interest that both continue at the same time.

As to petitioner's specific argument that the Delaware District Court is the best forum to evaluate the deposition of the inventor on one of the prior art references and the conflicting testimony on the issue of validity, the *Ethicon* decision is to be noted. The *Ethicon* Court noted that four reasons were presented as to why the reexamination should be suspended in the face of the ongoing litigation. The second reason was "because a trial includes live testimony and cross-examination, the court's decision will generally be based on a more complete record."² The Court found all four arguments not to be persuasive. The added flexibility provided to parties by resort to both forums at the same time outweighed the four reasons considered by the *Ethicon* Court.

Petitioner quotes MPEP 2686.04 that "[a] 'good cause' might be present, for example, where there is an issue that cannot be decided in the reexamination proceeding but affects the resolution of the proceeding. Another example is where there is an issue common to the litigation and the reexamination that can best be decided in court due to the availability in court of discovery and subpoena power (e.g., an issue heavily dependent on presentation of conflicting/contested evidence by the two parties)."³ Neither the order for reexamination nor the first Office action identify or suggest the presence of any issue that cannot be decided in the reexamination proceeding but affects the resolution of the proceeding, nor any an issue common to the litigation and the reexamination that can best be decided in court due to the availability in court of discovery and subpoena power.

Petitioner's argument that the court proceedings are at too late a stage for reexamination proceedings to commence is at odds with the statutes governing inter partes reexamination. 35 USC 317 marks the final decision as the point that reexamination proceedings may no longer be commenced or maintained. Pursuant to 37 U.S.C. 317:

¹ See also *In re Zletz*, 893 F.2d 319, 322, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) (the manner of claim interpretation that is used by courts in litigation is not the manner of claim interpretation that is applicable during prosecution of a pending application before the Office).

² *Ethicon*, 849 F.2d at 1428, 7 USPQ2d at 1156

³ See petition at pages 5-6.

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"Once a final decision has been entered against a party in a civil action arising in whole or in part under section 1338 of title 28, that the party has not sustained its burden of proving the invalidity of any patent claim in suit..., then neither that party nor its privies may thereafter request an *inter partes* reexamination of any such patent claim on the basis of issues which that party or its privies raised or could have raised in such civil action..., and an *inter partes* reexamination requested by that party or its privies on the basis of such issues **may not thereafter be maintained** by the Office, notwithstanding any other provision of this chapter. This subsection does not prevent the assertion of invalidity based on newly discovered prior art unavailable to the third-party requester and the Patent and Trademark Office at the time of the *inter partes* reexamination proceedings." [Emphasis added]

From the statute, it is clear that an *inter partes* reexamination proceeding was legislated to continue until a final decision (pursuant to 35 U.S.C. 317) has been entered, in a civil action, against the *inter partes* reexamination requester. In the present instance, no such final decision has been entered. Further, even if such a final decision were to be entered, the reexamination could be continued based upon an "assertion of invalidity based on newly discovered prior art unavailable to the third-party requester and the Patent and Trademark Office at the time of the *inter partes* reexamination proceedings," and that issue would need to be addressed.

Accordingly, good and sufficient reasons to suspend the reexamination proceeding have not been provided and the petition to suspend the instant reexamination proceeding is dismissed. The time period for response to the outstanding Office action on the merits remains two months.

PENDENCY CONSIDERATION

It is to be noted that the time period for response to the outstanding Office action on the merits has not been extended by the present decision, and it remains as set (in the Office action) at two months from the date of mailing of the action. It cannot be ascertained at the time of issuance of this decision, whether a timely response has been filed, and simply not matched with the file. In the event that the instant reexamination proceeding ceases to be, or has ceased to be, pending based on a failure to timely respond to the outstanding Office action, relief may be available under 37 CFR 1.137, should the fact situation be appropriate for same.

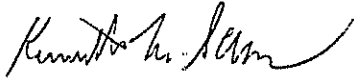
CONCLUSION

1. The petition to suspend the instant *inter partes* reexamination proceeding is dismissed.
2. The proceeding of reexamination control No. 95/000,071 continues to proceed. The time period for response to the outstanding Office action on the merits remains as set (in the Office action) at two months from the date of mailing of the action.
3. The reexaminations files are being forwarded to the examiner via the Director of Technology Center 3600.

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4. Telephone inquiries related to this decision should be directed to Anton W. Fetting, Senior Legal Advisor, at (571) 272-7717, or in his absence, the undersigned at (571) 272-7710.



Kenneth M. Schor
Senior Legal Advisor
Office of Patent Legal Administration

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June _8, 2005

EXHIBIT E



UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT

PUBLIC ADVISORY COMMITTEE

ANNUAL REPORT

NOVEMBER 30, 2005

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PATENT PUBLIC ADVISORY COMMITTEE

ANNUAL REPORT

I. INTRODUCTION

A. BACKGROUND AND OPERATION OF THE PATENT PUBLIC ADVISORY COMMITTEE DURING FISCAL YEAR 2005

Created to advise on “policies, goals, performance, budget and user fees of the USPTO with respect to patents,”¹ the Patent Public Advisory Committee (PPAC) is now entering its sixth year. By statutory mandate, the PPAC is composed of nine voting members who represent the diverse community of users of the United States Patent and Trademark Office (USPTO),² including individual inventors, universities, small entrepreneurial businesses, large U. S. corporations, and private practitioners. PPAC also has three non-voting members³ who represent the three labor organizations recognized by the USPTO and which serve the community of USPTO employees. Voting members have staggered three-year terms, with three voting members being up for replacement or re-appointment each year.

At the outset, the PPAC recognizes those members whose terms expired in July 2005. They provided a great public service, and their input has been an important part of the activities undertaken by the PPAC during this last year. We extend our thanks and recognize the important contributions of the following members whose terms ended in this past year:

- William L. LaFuze
- Albert L. Jacobs, Jr.

Since the last Annual Report, PPAC has added the following new members, appointed by the Secretary of the Department of Commerce in December of 2004, and in August of this year:

- M. Andrea Ryan, General Patent Counsel for TransForm Pharmaceutical, Inc. of Lexington, Massachusetts
- Carl E. Gulbrandsen, General Patent Counsel of Wisconsin Alumni Research Foundation of Madison, Wisconsin

¹ American Inventors Protection Act of 1999 (AIPA); 35 U.S.C. § 5(d).

² AIPA, 35 U.S.C. § 5(b)(2).

³ AIPA, 35 U.S.C. § 5(b)(3).

- Dean L. Kamen, an inductee of the National Inventors Hall of Fame, and founder and President of DEKA Research and Development of Manchester, New Hampshire
- Lisa K. Norton, a partner at DLA Piper Rudnick Gray Cary of Reston, Virginia
- Maximilian A. Grant, a partner at Latham & Watkins, Washington, D.C.

Additionally, Gerald Mossinghoff, a former Commissioner of the Patent and Trademark Office, and currently a partner at Oblon, Spivak, McClelland, Maier & Neustadt of Alexandria, Virginia, was re-appointed last August for another three-year term.

PPAC welcomes these new and returning members. They bring an exceptional diversity and wealth of experience to PPAC.

In-person meetings of the PPAC were held during this last year at the offices of the Commissioner for Patents, in Alexandria, Virginia. Members not attending in person were provided with the option of attending by conference call. Meetings⁴ of the PPAC during 2005 were held as follows:

February 28, 2005	New Member Orientation (Nov. 2004 appointees)
April 19 - 20, 2005	Executive Session ⁵ and Public Meeting
August 29, 2005	New Member Orientation (August 2005 appointees)
August 30, 2005	Executive Session and Public Meeting
October 25, 2005	Executive Session and Public Meeting

In addition to review of budgetary and fiscal operation of the USPTO, and review of progress in regard to the core objectives of improving patent quality, achieving electronic filing and application processing, and reducing pendency under the USPTO's *21st Century Strategic Plan*, discussed elsewhere herein, the PPAC reviewed and commented on the following rulemakings during FISCAL YEAR 2005:

- 1) Final Rule: Provisions for Persons Granted Recognition to Prosecute Patent Applications and Other Miscellaneous Matters;
- 2) Final Rule: Changes to the Practice for Handling Applications Filed Without the Appropriate Fees;

⁴ Transcripts and agendas of the public meetings may be found at <http://www.uspto.gov/web/offices/com/advisory/>

⁵ Matters discussed during the Executive Sessions will not be included in this report due to the restrictions on confidential information. USPTO budget and other confidential review are conducted in these meetings. To the extent information becomes public, it will be included in future Annual Reports

- 3) Proposed Rule: Changes to Implement the Patent Search Fee Refund Provisions of the Consolidated Appropriations Act, 2005;
- 4) Final Rule: Revision of Search and Examination Fees for Patent Cooperation Treaty Applications Entering the National Stage of the United States;
- 5) Final Rule: Changes to Implement the Cooperative Research and Technology Enhancement Act of 2004;
- 6) Proposed Rule: Changes to Practice for the Examination of Claims in Patent Applications;
- 7) Proposed Rule: Changes to Practice of Continuing Applications, Requests for Continued Examination Practice, and Applications Containing Patentably Indistinct Claims;
- 8) Final Rule: Provisions for Claiming the Benefit of A Provisional Application with A Non-Provisional Specification and Other Miscellaneous Matters;
- 9) Provisional Rule: Pre-Appeal Brief Conference for Patent Applications under Appeal to the Board of Patent Appeals and Interferences; and
- 10) Provisional Rule: Changes to Examination Practice for Means- (or Step-) Plus-Function Claim Elements in Patent Applications.

B. SCOPE AND FOCUS OF THE ANNUAL REPORT

This Annual Report first reviews the USPTO's mission and strategic goals, as reflected in the *21st Century Strategic Plan* (hereinafter, the "*Strategic Plan*"). Highlights of the fiscal year 2005 budget are then reviewed, followed by a brief evaluation of the President's fiscal year 2006 budget request for the USPTO. The USPTO's performance during fiscal year 2005 is then reviewed in regard to the core objectives of patent quality, e-government and pendency reduction. Additional accomplishments of note during fiscal year 2005 are briefly highlighted, and the Annual Report then concludes with some final observations.

II. USPTO MISSION AND STRATEGIC GOALS

Simply stated, the USPTO must ensure that the United States has an intellectual property system that is strong and vibrant. In terms of policy, this means that the USPTO is entrusted with responsibility to develop and maintain an intellectual property system that will 1) contribute to a strong U.S. and global economy and 2) foster the entrepreneurial spirit and encourage investment in innovation so as to meet the underlying Constitutional objective of promoting "progress of . . . [the] useful arts."⁶

⁶ Article 1, Section 8.

PPAC is proud to note that notwithstanding major challenges that still lie ahead of it, the USPTO is still more efficient, faster and less expensive than any other major patent office in the world. The USPTO has worked hard and has accomplished much during the almost three years since the *Strategic Plan* was adopted.⁷

Technology has and is becoming increasingly complex. At the same time, the number of pending patent applications in the world's examination pipeline continues to increase significantly. As originally envisioned, the *Strategic Plan* charts a comprehensive course designed to address these challenges. Three long-term themes are at the core of some fifty individual initiatives⁸ that make up the *Strategic Plan*:

- **Agility:** Creation of a flexible organization and work processes that can handle the growing complexity and volume of work, and the globalization that characterizes the 21st century economy. This theme calls for the USPTO to work both bilaterally and multilaterally with its international partners to create a stronger, better-coordinated and more streamlined framework for protecting intellectual property around the world, and by transforming the USPTO workplace by radically reducing labor-intensive paper processing.

⁷ During the appropriations process for FISCAL YEAR 2002, the USPTO was instructed by the Senate and the House to develop a five year strategic plan and a requirements-based budget structure that would serve to effectively improve the quality of granted patents, reduce patent pendency, and achieve electronic filing and patent processing. Senate Report 107-42 ("The Committee is pleased that the Secretary of Commerce has made a commitment to improve PTO operations and initiate an internal review to determine what the agency needs to do its job. Consistent with that approach, the Committee directs the Secretary of Commerce to develop a 5-Year Strategic Plan for the PTO . . ."); and 21st Century Department of Justice Appropriations Authorization Act, H.R. 2215 § 13104, 107th Congress ("The Director shall . . . develop a strategic plan that sets forth the goals and methods by which the United States Patent and Trademark Office will, during the 5-year period beginning on January 1, 2003: (A) enhance patent and trademark quality; (B) reduce patent and trademark pendency; and (C) develop and implement an effective electronic system for use by the Patent and Trademark Office and the public for all aspects of the patent and trademark processes . . .").

In response, following a rigorous review of its internal operations, and after concerted effort to work with many of the major user groups, including the ABA Intellectual Property Law Section (ABA IPL Section), the American Intellectual Property Law Association (AIPLA), the Intellectual Property Owners Association (IPO), the International Trademark Association (INTA), the Biotechnology Industry Organization (BIO) and others, the USPTO re-released its *Strategic Plan* on Feb. 3, 2003 (having originally released it in June 2002). The *Strategic Plan* can be found on the USPTO website at <http://uspto.gov/web/offices/com/strat21/index.thm>.

⁸ Some of the core initiatives of the *Strategic Plan* include consolidation of quality assurance activities; competitively contracting out classification and search functions, and concentrating Office expertise as much as possible on core government functions, in particular examination; and expanding bilateral and multilateral discussions to reduce duplication of effort among offices.

Following completion of the 21st Century *Strategic Plan*, the House Committee on Appropriations remarked that "This plan calls for some of the most sweeping changes to the patent review process in 200 years, and the Committee supports these recommendations. House Report 108-221. The *Strategic Plan* also received the support of many of the major user groups that worked with the USPTO during its development. In a joint letter dated Nov. 22, 2002 to the President's Director, Office of Management and Budget, AIPLA, IPO and INTA stated: "We are pleased that we can now report, in light of proposed refinements to the Plan recently shared with us by Under Secretary Rogan, that we whole-heartedly endorse the Plan." ABA IPL Section submitted a separate letter to the same effect.

- **Capability:** Enhancing quality through workforce and process improvements. This theme calls for the USPTO to make patent and trademark quality the highest priority in every component of the *Strategic Plan*, with the result that through timely issuance of high quality patents and trademark registrations, the USPTO will respond to market forces by promoting advances in technology, expanding business opportunities and creating jobs.
- **Productivity:** Accelerating processing times through focused examination. This theme calls for the USPTO to control patent and trademark pendency, reduce time to first office action, and recover its investments in people, processes and technology.

Simply stated, realization of these themes through the various initiatives of the USPTO's *Strategic Plan* is measured by three goals: enhancing the quality of granted patents and trademark registrations; reducing pendency and improving the productivity in processing applications for patents and trademarks; and increasing efficiency through expansion of electronic government programs.

Fiscal year 2005 marked the end of almost the third year since the *Strategic Plan* was adopted by the USPTO in February of 2003, and the first year in which the USPTO received full funding through appropriation of all planned fees, as recommended under the President's budget request. As the USPTO continues to critically evaluate achievement of these goals as a result of the initiatives contemplated by the *Strategic Plan* and in light of funding realities,⁹ the USPTO has been confronted with the need to reassess and refine its priorities with respect to those aspects of the *Strategic Plan* that warrant implementation, as discussed further below.

III. BUDGET REVIEW

A. FISCAL YEAR 2005 BUDGET REVIEW

For the first three months of fiscal year 2005, the USPTO remained under the restrictions of a continuing resolution before an appropriations bill was passed, thus limiting the USPTO budget to levels of spending set for the previous year.¹⁰ The fiscal year 2005 appropriation of \$1.554

⁹ For the first four months of fiscal year 2004, the USPTO remained under the restrictions of a continuing resolution before an appropriations bill was passed, thus limiting the USPTO budget to levels of spending set for the previous year. The fiscal year 2004 appropriation of \$1.222 billion represented an increase of \$40 million, or 3% more than spending levels under the fiscal year 2003 enacted budget. However, the fiscal year 2004 appropriation fell short of the President's budget request of \$1.404 billion by \$182 million (or 13%). As PPAC predicted last year, these funding levels have severely challenged the operations of the USPTO, making it difficult just to meet basic operating expenditures, let alone providing for any significant implementation under the second full year of the *Strategic Plan*. This is especially true since \$44,000,000 in the USPTO's fiscal year 2004 budget was already required by contract to be allocated to pay for the move of the USPTO to its new campus in Alexandria, thus effectively eliminating even the 3% increase (e.g. \$40 million) for any use beyond the scheduled move in 2004.

This same pattern occurred with respect to USPTO funding during fiscal year 2003. The USPTO was also under a continuing resolution for the first four months of that fiscal year, and that year's appropriation of \$1.182 billion provided \$183,000,000, or 13.5% less than the President's request of \$1.365 billion.

¹⁰ See note 9 *supra*.

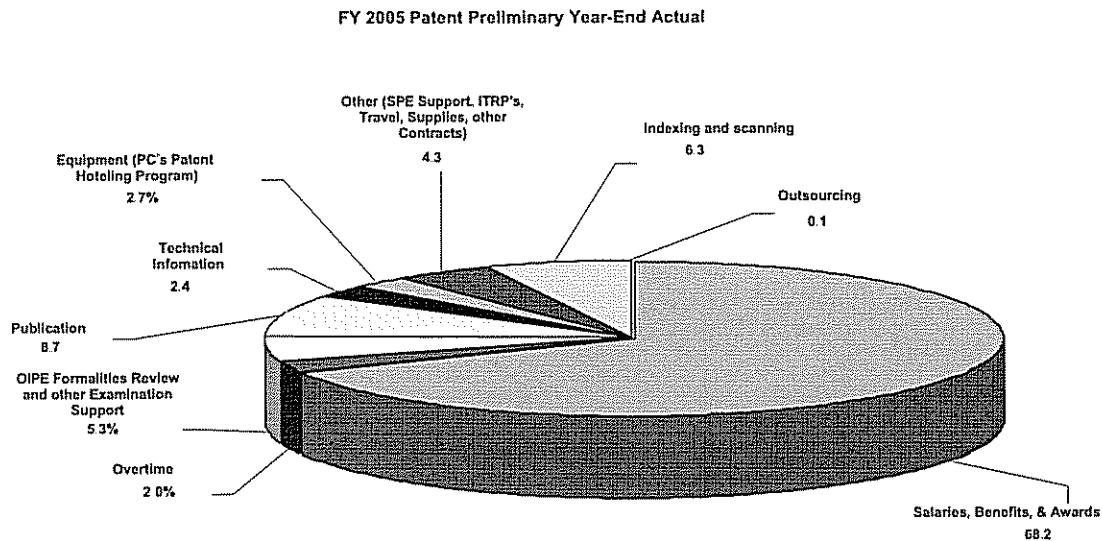
billion represented an increase of \$275 million, or 22.5% more than spending levels under the fiscal year 2004 enacted budget.

Total funding available for spending in fiscal year 2005 was \$1.571 billion (\$1.554 billion appropriated, \$2.3 million carryover from fiscal year 2004, and \$10 million in recoveries in fiscal year 2005). Estimated fee collections for fiscal year 2005 under the President's budget were \$1.563 billion with the fee bill, as compared to actual receipts of \$1.511 billion. Planned obligations of the USPTO under the President's budget for fiscal year 2005 were \$1.571 billion, as compared to actual obligations of \$1.508 billion for the year.

The following charts illustrate actual USPTO expenditures for fiscal year 2005. Chart 1 illustrates spending by business area, and Chart 2 illustrates the breakdown of expenditures for the patents business area of the USPTO's budget.

BUSINESS AREA	FY 05 (Actual \$ in 000s)
Appeals Boards	24,748
General Counsel	9,079
Director's Office, External Affairs, CFO	69,659
Patents	824,050
Trademarks	87,550
CIO	274,782
MGE	218,524
Total	\$1,508,392

**Chapter 1 - Fiscal Year 2005 Expenditures By
Business Area - Actual**



Chapter 2 - Fiscal Year 2005 Expenditures for Patents - Actual

B. THE PRESIDENT'S BUDGET REQUEST FOR FISCAL YEAR 2006

Turning briefly to fiscal year 2006, PPAC is pleased to note that like last year, this year the President's budget request for \$1.703 billion had no planned fee diversion.¹¹ In that respect the President's budget continues to represent a much needed and welcome change in USPTO budgetary policy.

At the time of this report, the USPTO had reduced its fee projections for fiscal year 2006 as originally contained in the budget submitted to the President by \$20 million, to \$1.683 billion.

Acknowledging the revision in fee projections, the Conference Committee Report includes a budget of \$1.683 billion for the USPTO. H.R. 2862, the "Science, State, Justice, Commerce, and Related Agencies Appropriations Act, 2006" was signed into law by the President on November 22, 2005. The Act includes earmarks of:

- \$500,000 for the National Intellectual Property Law Enforcement Coordination Council (NIPLECC),
- \$1 million for the International Intellectual Property Institute, and
- \$3 million for the National Inventor's Hall of Fame.

¹¹ The President's budget request included a proposed \$44 million transfer to OPM for USPTO retirement benefits, but we do not view this as a diversion of fees for non-PTO uses, but rather, as a legitimate agency cost used for the employees of the USPTO.

Appropriations will, for the second year in a row, provide the USPTO with full access to all user fees paid to it, up to the full \$1.683 billion amount budgeted and appropriated.¹²

PPAC strongly endorses the action taken by the Administration and Congress of ending fee diversion and fully funding the USPTO, as represented in the fiscal year 2005 and 2006 President's budgets and the Congress' appropriations. As noted previously by the PPAC and others, past failures to provide the USPTO with full funding from the user fees paid to it has seriously impacted USPTO operations and has been at the root of many problems currently faced by the USPTO.¹³

Provided that the Congress will be willing in future years to permanently adopt the fee increases as contemplated under the Fee Modernization Act (which will expire at the end of FY 2006) and provided that the policy set by the Administration under the fiscal year 2005 and 2006 budgets of ending diversion of user fees for non-USPTO expenditures is continued in future years, the increased funding provided under the Fee Modernization Act will permit the USPTO to continue to aggressively work toward achieving the goals set under the *Strategic Plan* of continuing to improve patent quality, reducing pendency to more acceptable levels, achieving the benefits of electronic filing, management and processing of applications. This will continue to keep the USPTO in the forefront as the world's leader of the global intellectual property system, and will help to insure that the U. S. patent system continues to play a strong role in supporting a vibrant domestic and global economy.

IV. FISCAL YEAR 2005 PERFORMANCE HIGHLIGHTS

A. QUALITY

The USPTO uses two measures to help it determine how well it is achieving the strategic goal of patent quality. These two measures are allowance error rate,¹⁴ and in-process compliance rate.¹⁵

¹² In one sense, the USPTO is "fully funded" since it is anticipated that there will be no diversion of fees. However, whether there in fact will be some diversion of user fees during fiscal year 2006 will ultimately depend on whether the actual fees collected by the USPTO exceed the amount appropriated for the USPTO for fiscal year 2006.

¹³ See, for example, the reports released within the last two years by the NAS ("A Patent System for the 21st Century," p. 68, noting that "To improve its performance, the USPTO needs additional resources. These funds should enable hiring additional examiners, implementing a robust electronic processing capability, and creating a strong multidisciplinary analytical capability The current USPTO budget does not suffice to accomplish these objectives") and the FTC ("To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy," noting that "Presidential patent review committees have long advocated more funding for the PTO to allow it to improve patent quality. As recently as 2002, the Patent Public Advisory Committee stated that the PTO 'faces a crisis in funding that will seriously impact . . . the quality of . . . issued patents' The FTC strongly recommends that the PTO receive funds sufficient to enable it to ensure quality patent review." Executive Summary, pp. 12 - 13).

¹⁴ Allowance error rate is an end-process review which concentrates on the improper allowance of claims. The USPTO defines this as any claim which should not have been allowed under any of statutory sections 102 (anticipation), 103 (obviousness), 112 (lack of written description, lack of enablement, indefiniteness) or 101 (non-statutory subject matter).

Of the two quality measures reported, the USPTO exceeded one of them (in-process reviews) and fell short of the other (allowance error rate).

The USPTO fell short of its targeted fiscal year 2005 allowance error rate (4.55% actual vs. 4.0% target error rate). However, this is an *average* taken across all technology centers, and the USPTO continues to meet the quality goal in a number of key areas.¹⁶ During 2005, the USPTO put great emphasis on reaching the quality goal of a maximum 4% allowance error rate. An error rate this low had not been achieved in any of the previous four years. As of mid-year, the allowance error rate was at 5.2%. In an effort to bring the allowance rate down the USPTO performed a far-reaching, rigorous review of all allowed applications during the second half of the fiscal year. During this period, each allowed application was reviewed by an additional employee – either a supervisory or primary examiner. While this review was very time-intensive, using at least 27,000 management hours, this effort resulted in a decreased error rate for the second half of the year which was below 4%. However, when combined with the first half of the fiscal year results, the overall allowance error rate for the year was 4.55% as noted.

While clearly this effort had a positive impact on reducing the allowance error rate, on the other hand it also had a negative impact on the overall number of applications allowed during the fiscal year, dropping overall allowance rate from 62.5% in fiscal year 2004 to 58.7% for this fiscal year. As noted in discussions between management and the PPAC, this would suggest fine tuning the rigor with which allowed applications are reviewed, by reviewing perhaps all or a high percentage of allowed cases in art units where the allowance rate exceeds the target, but reducing the number of reviews in those art units where the allowance rate is under the target rate. The advantages and disadvantages of this initiative will be considered further when determining the quality initiatives for fiscal year 2006.

In addition to end-process reviews, the USPTO also conducted a thorough in-process review of a percentage of applications from each examiner. In this area, the USPTO exceeded its compliance rate. The in-process compliance rate goal was 84.0%. This goal was exceeded by 2.2%. Overall, the in-process review compliance rate in FY 2005 was 86.2%. The PPAC sees this as a positive reflection that efforts to improve quality are succeeding, and that these results will also eventually be reflected in improved metrics with respect to the allowance rate error as well.

PPAC commends the USPTO in its continuing effort this past year to make improvement in patent quality its highest priority under the *Strategic Plan*. These efforts are reflected in the

¹⁵ In-process review, as opposed to end-process review, concentrates on improper rejections under any of statutory sections 102, 103, 112 or 101, for example, rejections based on art that does not meet all of the claimed limitations for purposes of anticipation or obviousness, or the failure to identify adequate motivation to combine references when making a rejection based on obviousness.

¹⁶ By way of example, in those TCs responsible for examining electrical and computer engineering applications, e.g., Tech Centers 2100, and 2600, the FY 2005 error rates were 3.6%, and 2.3% respectively, as compared to the actual overall average error of 4.55% for the entire examining corp. This is a positive reflection that, particularly in some of the most challenging technologies, the USPTO's efforts to improve quality are succeeding.

number of new patent quality initiatives which the USPTO began during this last fiscal year. These include:

- **Search Recordation** – A Revised Procedure for Recording Search and Information

Printed on the Face of Patent under the Heading "Field of Search" was published in the Official Gazette July 19, 2005. This procedure sets forth the requirement for examiners to record with greater clarity how the prior art search was conducted. Classified searches are recorded differently than are classified searches limited by text queries and electronic text-based searches, thus letting supervisory personnel of the Office and, ultimately, practitioners better understand how the prior art search was conducted. This initiative was strongly supported by PPAC as a positive step in improving patent quality. Clearly, having the best art available at the time of examination will strengthen those patents issued, and thus the ability to more transparently see how the search was conducted should lead to better searches and hence better examination of applications, as well as better uniformity in how searches are conducted.

- **Tri-way Project** - Under the Tri-way proposal, an applicant may file an application in each of the Trilateral Offices. Each application must be ready for examination. One of the Trilateral Offices will be elected as the first Office to perform the search and examination. The application in the first Office will be placed in the special status queue for action and the first Office will provide the search results and the resulting Office action to the other two Offices in the Trilateral Dossier Access System (TDA) within an agreed upon time period. The second and third Offices will complete their respective searches within an agreed upon time period, and then the search results from the second and third Offices will be posted in the TDA to be available to all Trilateral Offices. This will provide the applicant with the best art found by all three of the Trilateral Offices, as well as providing the opportunity for shared search results and exploitation of those results by all three Trilateral Offices during examination, something which to date has proven to be a very elusive goal.
- **Pre-appeal Brief Conference** – A pilot was started on July 12, 2005 to conduct a pre-appeal brief conference at the applicant's request prior to the applicant's filing of an appeal brief. Upon receiving the request, a panel of examiners, including supervisors and primaries, meet to discuss the merits of the rejection of record. One of three results is possible: moving forward to appeal, reopening of prosecution, or allowance. This procedure was seen by PPAC and others as providing a significant savings in costs for applicants where either prosecution is reopened or the rejection is withdrawn and the case is allowed. Since the pilot's beginning in July, about 1000 cases were subject to a request for a pre-appeal brief conference. The Office decided to move forward to appeal in about 40% of the applications, and withdraw the previous rejection (for either allowance or reopened prosecution) in about 60% of the applications.
- **Central Reexam Unit** – In a significant effort to reduce the pendency of some of the most critical applications, e.g., those in reexamination, three special programs examiners and eighteen examiners were selected to become dedicated staff to a new

unit devoted to examining reexamination applications. After July 25, 2005, all reexamination proceedings were assigned to this unit. Each action mailed out is signed by a panel comprising the examiner, an examiner conferee and a special programs examiner. Each member of the central reexam unit received extensive training for both *inter partes* and *ex parte* reexamination applications. For those reexamination applications pending in the technology centers, a massive clean-up effort was undertaken whereby more than 600 applications in reexamination were issued office actions. By the end of this fiscal year, *all* reexamination applications pending over two years had received an office action. PPAC commends the USPTO for the positive change this has made in a highly critical sector of the USPTO's examination operation.

- **Expedited Examination (MPEP §708.02 VIII) for Applications Requesting Special Status** – In yet another effort to reduce pendency for a critical segment of pending applications, e.g., those requesting special status, during the second half of this fiscal year special emphasis was placed on answering petitions for accelerated examination under MPEP §708.02. Training was given to all of the special programs examiners to ensure that decisions are being made accurately and uniformly. Also, if the petition was granted, the Technology Centers monitored the application to ensure expedited examination of the application. This effort significantly reduced the number of pending petitions to not more than one in any technology center, with the exception of TC 2100 which had far more petitions to decide than the other TCs.
- **Search Templates** – In an effort to bring greater uniformity and quality to the prior art search performed by examiners, the Office is piloting a program in which it has created search templates for approximately six hundred technology areas. Each search template defines the search field and resource areas of general subject matter, classes/subclasses, patent documents (both U.S. and foreign) and non-patent literature that an examiner should consider each time a patent application is examined in that classification area. Additionally, the search template will indicate which search tools and methodologies should be considered when performing the search. These are expected to be used by USPTO external customers as well as by examiners.
- **Improved Quality Compensation Program for Supervisory Patent Examiners** – This year the Office instituted a compensation program for supervisory patent examiners in which a supervisor was eligible for an additional end-of-year bonus dependent on quality data outcomes from their technology centers.

In addition to the new initiatives begun in this fiscal year as outlined above, the USPTO has continued with implementation of those quality initiatives that were begun during the first two years of the *Strategic Plan*, including:

- Improved pre-employment screening for new examiner hires by
 - Certifying that new hires have better communication skills through improved oral interview processes and writing samples.

- Improved certification of patent examiner and supervisor knowledge, skills and abilities (KSA) by
 - Incorporating the KSAs into patent examiner training programs to ensure that the examiners and supervisors have the requisites needed to be successful in their positions;
 - Establishing Training Art Units for new examiners in high volume technology centers; and
 - Initiating several continuing legal education (CLE) courses for examiners.
- Certification of examiners prior to GS-13, by
 - Work product reviews
 - Requirement for passing the certification exam
 - Offering Patent Law, Evidence and Practice and Procedure courses
- Re-certification of Primary Examiners by
 - Increasing the number of work product reviews; and
 - Developing required CLE courses for Primary Examiners.
- Implementation of a quality assurance program for technical support personnel, by
 - Adopting and implementing new performance standards.

Lastly, and as discussed in more detail below, both PPAC and the USPTO believe that improving patent quality is a *mutually shared* responsibility of both applicants and the Office.

There are certain applicant behaviors which continue to exacerbate the ability of the Office to perform focused, timely and quality examinations in certain cases. Late filing of prior art in information disclosure statements (IDS) or filing huge numbers of references in an IDS unduly complicate examination and tax examination resources. Similarly, filing applications with inordinately large numbers of claims, or delaying issuance of an application by filing one continuation after another are all practices that in various ways unduly encumber the Office and complicate the examination process. Since each of these practices may also serve legitimate interests, contemplated rule changes affecting these practices will of necessity require thoughtful balancing of the competing interests as discussed more fully below in the section on pendency.

B. E-GOVERNMENT

PPAC is pleased to report that the USPTO continues to make significant strides towards achieving the e-government goals of the *Strategic Plan*.

1. Electronic Management of Applications

a. Stage 1: The Image File Wrapper (IFW) System

As reported in last year's Annual Report, the USPTO made significant progress in deployment of the Image File Wrapper (IFW) system. The IFW system is an electronic image version of the paper patent application file wrapper, and is created by scanning all papers in the application file

wrapper using software initially developed by the EPO. IFW provides users with instant and concurrent access to their patent applications, eliminates examiner interruption for paper entry, and eliminates lost or damaged papers.

PPAC is pleased to report that this year the USPTO substantially completed deployment of the IFW system into all 284 Group Art Units (GAUs) of the various tech centers in the USPTO and thus availability and use of the IFW system by all 3,664 staffed patent examiners. Examiners in all GAUs and their staff are now able to electronically access almost all applications using the IFW system.

The following objectives were met by the IFW system:

- IFW enabled the USPTO to make the major business transition from a paper based patent application process to an electronic image based application process in much less time than it would have taken to complete the XML text based TEAM project.
- The adoption of IFW enabled the USPTO to accomplish the move to the new Alexandria campus without moving hundreds of thousands of paper applications, and avoided the potential loss of documents and applications.
- IFW also enabled the USPTO to avoid using valuable real estate in the new facility for storage of paper patent applications.
- IFW provided public access to the complete application file wrapper via the Internet, eliminating the time consuming process for retrieving paper files.
- IFW permits multiple users to access the same application concurrently.
- IFW permits independent business processes to be conducted on the same application at the same time.
- IFW is the official legal record, simplifying the ordering and delivery of certified copies of patent applications.
- IFW has enabled the initiation of a dossier exchange program with the EPO that will contribute to work sharing and improved quality of examination.

b. Stage 2: The Patent File Wrapper (PFW) System

The IFW system is an important first step in creating a patent application system that is not only paperless, but also faster and easier to use, and will better serve internal PTO personnel, applicants and the public. With IFW fully deployed, the USPTO is now ready to begin the development and implementation of the second phase of the electronic processing pipeline for applications, the text-based version, or Patent File Wrapper (PFW) system.

The PFW system is a set of tools that facilitates end-to-end electronic text-based processing of patent applications with the objective of improving the access to the data and information contained in patent applications by both examiners and the public by providing the capability of text and field searching. This will ultimately improve efficiency of the business process and enhance customer (e.g. applicant and public) interaction with the USPTO.

The PFW system includes three main components: an Electronic Filing System (EFS) Web project, discussed further below; an upgraded data capture system; and a document content management repository.

The EFS Web project will provide an easy-to-use browser-based interface utilizing forms that will be captured, stored, and transmitted in the familiar, widely used PDF file format. The data capture component will replace the data capture system now in use with an upgraded capture system which will convert paper applications into text, capture color and gray scale images as appropriate, and increase the quality and auto-indexing of the capture process. The repository component will provide a document content management repository to store all electronic patent application images, text, and data. As noted below, the PFW system will use the repository component to provide enhanced functionality such as managing electronic work queues, work process flow, version control at the document level, facilitating annotations of documents, comparing versions of a document, previewing amendments before accepting the changes, claims tree processing, and other functions.

During fiscal year 2005, the USPTO took major steps in the planning, scheduling, and budgeting for the PFW system. In fiscal year 2006, efforts will be directed at development and implementing of the PFW system components.

In addition to some of the functionality already provided by the IFW system, the PFW system will provide examiners with the following additional functionality for electronic processing of applications:

- Text search within the application
- Print & view text document parts
- Claim management – including maintaining an index of claims and a claim tree diagram
- Recording additional file wrapper information (search results, search notes, acknowledgement of priority information, etc.)
- Comparing versions of a document and amendment versions of a document
- Previewing the effect of the amendment before accepting the changes
- Keeping a more detailed audit trail of changes for electronic record management purposes (version control, tracking, who made changes, timestamp, etc.)

- Automating the determination of appropriateness of action that can be taken on an application based on the status
- Creating and delivering pre-exam, exam and post-exam related electronic correspondence to applicants by leveraging the capabilities of other existing electronic systems already in use at the USPTO (the DMS, OACS, PALM, and eFiling Portal systems)
- Leveraging workflow to provide electronic review and approval of outgoing correspondence
- Providing electronic markup of documents
- Leveraging existing IFW images by converting them to PDF images plus hidden text in order to provide full text capabilities for all existing electronic documents

2. Supplemental Complex Repository for Examiners (SCORE)

Also in fiscal year 2005, the USPTO deployed the first version of the Supplemental Complex Repository for Examiners (SCORE). SCORE is a Web based system that stores unpublished non-image application data and files that cannot be scanned into the IFW repository in the tagged image file format (TIFF) because of their file size or type. These files contain sequence listings with millions of pages, tables, or biotechnology information that requires specific file types and has specific viewing requirements. USPTO patent examiners and applicants can use SCORE to access these application files.

3. Patent Employee Remote Access

As mandated by the Appropriations Act, 2005, this year the USPTO hired 978 new patent examiners (959 of which were hired for utility application examination). Approximately another 1000 new hires are anticipated for fiscal year 2006. The number of new personnel added to the examining corps itself presents some major logistical challenges to the USPTO in terms of how to house, train, manage, supervise and retain that many new employees.

PPAC notes that the USPTO is working hard to respond to these challenges with innovative ways to expand its examining capability without adding significant additional cost for new space requirements. This fiscal year the USPTO initiated an Employee Remote Access Program as a means of providing the needed flexibility and responsiveness of the patent organization to meet its mission with respect to increasing workloads, and increasing hiring to meet those workloads, as well as meeting the challenges of changing technology. This program is also expected to reduce the need for increased USPTO office space requirements associated with increased hiring goals.

The Remote Access program provides participants with the ability to work remotely in an electronic environment that is fully supported with complete access to online USPTO systems for patent application examination and processing during normal business hours. The program incorporates the concept of "hoteling," where telecommuting participants reserve time in designated shared "hotel" offices at the Alexandria HQ facility (or potentially viable satellite work stations) to conduct on-campus business activities such as conducting personal interviews with applicants and attorneys, satisfying training requirements, attending meetings, and accessing other on-site resources and personnel.

Overall objectives of the Employee Remote Access Program are expected to include:

- Expanding the geographical flexibility to achieve full remote access to all electronic patent examination tools and informational resources needed to fully perform job duties.
- Increasing the number of employees who can work from remote locations
- Increasing the productive time employees can work from remote locations
- Developing and deploying a reliable and consistent IT remote access solution that provides the same desktop functionality, communication protocols, and integrated user access as presently available within the USPTO office environment without a significant degradation in performance.
- Providing and maintaining secure online access to sensitive data stored at the USPTO for remote access.
- Providing employees with an automated tool to remotely schedule hotel time within the USPTO campus.
- Providing employees with the capability to collaborate remotely with supervisors and other employees on a face-to-face basis. Remote collaboration will be enabled using commercially available meeting support tools such as video conferencing, telephone conference bridging, application sharing, web meeting, and instant messaging applications.
- Recovering office space and the associated cost thereof.
- Increasing the ability of supervisors and managers to effectively and accurately review an examiner's work online.
- Maintaining and expanding training opportunities for examiners.

During fiscal year 2005, an initial pilot was implemented with patent managers. For the initial pilot, participating managers access their desktop computers located in the Alexandria campus via an encrypted virtual private network (VPN) using Windows XP remote desktop protocol

(RDP). Pilot participants are provided with a computer, LCD monitor, router, and a multi-function printer for a home office. During this pilot, participants will be required to respond to written surveys and to participate in focus sessions related to the remote access experience. The feedback from such surveys will be used to make changes to the remote access system to ensure full capabilities are provided as the pilot moves to full production capability. During fiscal year 2006, the pilot will be expanded and a production version will begin to be deployed.

4. Electronic Filing System (EFS)

As noted in last year's Annual Report, near the end of fiscal year 2004 the USPTO conducted an Electronic Filing Forum, with the objective of gaining insight from those attending as to what steps the USPTO needed to consider taking in order to substantially increase the number of patents being filed electronically. A second follow up Forum was conducted on the West coast in May of this year.

A core message conveyed by those attending each Forum was that the current EFS (including both PASAT and ABX) is cumbersome, time consuming, costly, and inherently risky. Attendees uniformly expressed high levels of frustration with the authoring tools, including difficulty of use, inability to download necessary software through firewalls, and disruption to workflow. Forum attendees were nearly unanimous in their desire for a web-based system that can accept PDF documents and better match their workflow processes.

PPAC is pleased to note that the USPTO has responded in what PPAC believes is a responsive and responsible manner to the outcome of the Forum. In that regard, there are both front-end and back-end considerations in system design that must be taken into account in considering what may be the best overall approach and solution to both electronic filing and electronic work flow processes. Front-end system design focuses on increasing user compliance with e-filing by simplifying the EFS system and making it safe. Back-end system design focuses on how electronic documents, once filed, are converted to the most useful format possible that will ultimately support robust use of the electronic data to maximize electronic searching and retrieval by both the USPTO and the public, compatibility with other major patent offices (e.g., trilateral partners) and information searching and retrieval by user and public communities. Challenges exist in melding the front-end and back-end considerations and in maintaining interoperability between platforms over time.

The PTO has historically pursued a character-based EFS system (e.g., XML-based technologies such as PASAT and ABX) because of its long-term objective to fully integrate front-end filing with the back-end workflow processes of the PTO (e.g. publication, archiving, retrieval). Those back-end workflow processes currently use XML-based systems because the character-based data are much more robust in terms of data management, archiving, searching and retrieval.

After reassessing its historical character-based (i.e. XML type) approach to EFS in view of feedback provided by attendees at each Forum, the USPTO has moved ahead aggressively, as noted above, with the the planning, scheduling, and budgeting of the PFW system, which, as noted, includes the EFS Web project. The EFS Web project will provide an easy-to-use browser-based interface utilizing forms that will be captured, stored, and transmitted in the familiar, widely used PDF file format, and then converted using the other components of the

PFW system to convert the PDF formatted file into character-based, text and field searchable data for use on the back end.

With EFS Web, an applicant chooses the word processing program to use for creating a patent application specification. Then, using a PDF-generation tool, the applicant will create PDF files for the specification, claims, abstract, and any drawings. The applicant may choose any software products that are compatible with their environment that will create PDF files that comply with USPTO-defined PDF format standard, thus greatly improving flexibility and expected increased adoption of electronic filing as a preferred filing option. The USPTO also plans to develop and provide PDF forms that will be available as optional means of electronic filing by implementing two Adobe COTS products: Adobe LiveCycle Reader Extensions and Adobe LiveCycle Forms. Applicants will be able to enter bibliographical data into the PDF forms and submit them without the need for additional software, beyond the Adobe Reader software that is already widely in use and readily available.

After preparing the desired filing documents, an applicant will establish a secure connection with the USPTO and begin the electronic filing process. During the secure session, the applicant will provide some bibliographic data associated with the application and indicate the PDF documents to be included in the submission. When the desired documents have been indicated, they will be securely transmitted to the USPTO. Upon successful transmission, the applicant will receive an acknowledgement receipt. If the submission documents are not valid based on the USPTO PDF profile, the applicant will receive an error message, and the applicant may then make any changes needed and resubmit the application.

Pilot deployment of the EFS Web solution is beginning as this Report goes to publication, with the production release scheduled for March 2006.

Previous use of the USPTO's patent electronic filing system (EFS) presented significant challenges. Up to this point, only about 2.2% of all newly filed applications are electronically filed. PPAC is pleased to see what it firmly believes to be a light at the end of this tunnel, and looks forward to working further with the USPTO in the analysis of the EFS Web pilot.

C. PENDENCY

Average patent pendency (filing to issue) for fiscal year 2005 was 29.1 months,¹⁷ up from last year (27.6 months) but less than the adjusted target¹⁸ for fiscal year 2005 that was projected to be 31.0 months.¹⁹ Average time to first action (from filing to examination) was 21.1 months, also

¹⁷ These numbers are as of October 1, 2005, the most recent data available at the time of this writing.

¹⁸ *Adjusted* targets are developed once the USPTO receives its actual appropriation from Congress as compared to the President's request (for example, for FY 2004, a *reduction* of \$182 million or 13% as compared to what was requested in the President's budget was appropriate) as well as by taking into account any the number of months during which the USPTO must operate under a continuing resolution while waiting for an appropriations bill to be passed. This fiscal year, Congress appropriated the full amount requested by the President, but there were three months of operation under a continuing resolution.

up from last year (20.2 months), but which otherwise met the adjusted target for fiscal year 2005 of 21.3 months. As we stated last year, “PPAC commends the men and women of the U. S. Patent and Trademark Office. They are continuing to work hard not to fall farther behind, and to meet targets set by USPTO management with respect to . . . pendency.”

While fiscal year 2005 targets for overall patent pendency and first action pendency were either met or exceeded in relation to adjusted targets, the *trend* represented by the increase from year to year continues to be deeply disturbing. In some technology areas, the backlog of applications has reached such a level that, were an application filed today and no changes made, it would be greater than fifty months until first action. Pendency thus continues to be a major strategic objective of concern. In the absence of not only halting but indeed *reversing* this trend, pendency will inevitably add to uncertainty for competitors who would otherwise seek to avoid infringing activity, and will stifle investment opportunity for others.

PPAC has spent considerable time this last fiscal year discussing this challenge, including its causes and possible solutions. The increase in pendency is caused by several factors. Filing rates continue to go up. During fiscal year 2005, approximately 384,000 utility, plant and reissue applications were filed. This represented approximately an 8% growth rate over the fiscal year 2004 filing rate, and a 2.5% increase over the expected growth rate which was assumed in this year’s budget. The growth is primarily in high-complexity, high-tech areas. These are the areas in which examiners have the greatest amount of time to complete an examination. As these filings go up, and low-complexity applications become a smaller and smaller percentage of the total applications received, the USPTO experiences a phenomenon called “complexity creep”. In other words, as the examining corps is working on a greater percentage of high-technology applications, fewer total applications are examined, as high-complexity cases take longer. The same number of examiners working the same number of hours will progressively complete fewer and fewer applications due to this type of “complexity creep”.

Another significant factor is the history of appropriating less than all budgeted user fees paid to the USPTO. PPAC and others have noted for a number of years the growing problems this presents for the USPTO.²⁰ As we noted in the concluding observations of last year’s Report:

The \$180 million reduction in the amounts appropriated (as compared to the President’s budget request) for the USPTO during the first two years of its *Strategic Plan* (i.e. for FY 2003 and FY 2004) has resulted in limiting the number of new examiners hired to meet the increasing workload to replacement of attrition only. In other words, FY 2003 and FY 2004 represent, in real terms, *lost* years. The *Strategic Plan* called for 750 new examiners to be hired in each of FY 2003 and FY 2004. Thus, taking into account the almost 900 new examiners not hired in FY 2003 and FY 2004,²¹ to make up

¹⁹ It is also worth noting all but two of the TCs (2100 and 2600) were either at or below the adjusted pendency target for fiscal year 2005. Five TCs (1600, 1700, 2800, 3600 and 3700) had average pendencies of between 20 and 30 months. TC 2900 was between 15 and 20 months average pendency.

²⁰ See footnote 13 *supra*

²¹ Of the total 1500 new hires contemplated for fiscal years 2003 – 2004, approximately 600 of them represented replacement of attrits.

for these two years alone, the USPTO would have to hire in FY 2005 those 900 or so new examiners *in addition* to the 650 new hires which are expected under the *Strategic Plan* for FY 2005, or a total of approximately 1,550 new hires. This simply is not possible even if it were funded by appropriations, because of the limitations in ability to train and assimilate that many new hires. Hence the reason why these years represent *lost* years in terms of reducing pendency as initially set out in the *Strategic Plan*.

Yet another factor is that competitive outsourcing of the prior art search function for domestic applications is an initiative that was devised in the *Strategic Plan* as a way of saving significant examiner time that would be devoted to examining applications for which the prior art search had already been done. As such, this was planned as a way of helping to significantly decrease the backlog of applications. However, during fiscal years 2003 – 2004, as already noted, the USPTO operated under such severe funding strictures that little or no progress on competitive outsourcing had been made by the end of fiscal year 2004. Added to that, in passing of the Omnibus Appropriations Act following the end of last fiscal year, Congress expressed serious reservation as to the efficacy and viability of competitive outsourcing of the domestic prior art search function, with the result that it has been effectively delayed for 3 – 5 years.

Still another factor is the effect of certain applicant behavior on the patent examination process. As noted in the preceding discussion of patent quality, there are certain applicant behaviors which continue to exacerbate the ability of the Office to perform focused, timely and quality examinations in certain cases.²² Notably, delaying issuance of an application by filing one continuation after another is a practice that has in some ways become all too prevalent, and in various ways unduly encumbers the Office in terms of timely examination. For example, the following chart clearly shows that over the period of 2002 – 2005, continuation applications are taking up an increasing amount of examining resources, reaching levels of some 28% this fiscal year.

²² This is not to say that to a certain extent, the filing of continuations and requests for continued examination do not have a legitimate purpose, as noted in the preceding discussion of patent quality, at pp. 12 – 13. As noted, this raises what will undoubtedly be a difficult question of striking a proper balance between the competing interests involved.

Technology Centers' Rework* Statistics

	FY2002	FY 2003	FY 2004	FY 2005**
TC Summary	% FAOM Rework	% FAOM Rework	% FAOM Rework	% FAOM Rework
1600	36.4%	39.7%	40.3%	42.7%
1700	25.2%	26.9%	27.1%	27.1%
2100	23.9%	24.0%	24.6%	24.9%
2600	24.8%	24.1%	24.3%	24.7%
2800	19.1%	22.0%	24.9%	24.7%
3600	17.7%	21.2%	23.1%	27.9%
3700	22.2%	25.1%	24.0%	27.9%
Average	23.2%	25.3%	26.1%	27.8%

* Rework first actions are those actions that are in a Continuing, CPA or RCE application

** As of May 21, 2005

In the absence of these cases, it is fair to say that the Office would be working into the backlog of new original applications to a much greater extent than it currently is, or at least not significantly adding to the backlog.²³

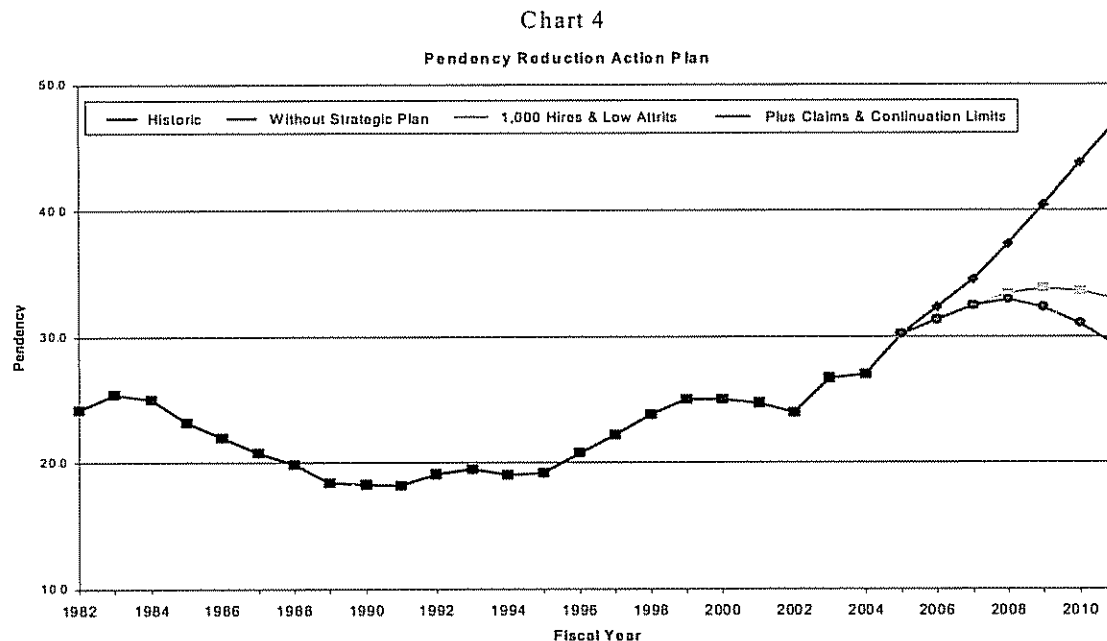
In short, increasing pendency is a complex problem that has resulted from a number of factors in the view of PPAC, including continued high demand (e.g., continued increases in the number of filings), increasing complexity of applications which require greater examining resources to dispose of them, shortage of adequate resources to meet the increased demand due to under funding of the Office over a period of more than a decade by appropriating less than the budgeted user fees submitted by the Office in its annual budgets,²⁴ changes in some key assumptions for reducing pendency as contained in the *Strategic Plan* (for example, competitive outsourcing of the prior art search function for domestic applications, and changing worker profiles²⁵), and certain applicant behaviors such as continuation/RCE practice.

²³ At the beginning of fiscal year 2005 the USPTO had a new case inventory of Utility, Plant and Reissue (UPR) applications of 508,878. At the end of the fiscal year there were 586,580 new UPR applications, for an increase in inventory of 77,722 new applications. Also, during fiscal year 2005 there were 297,287 first actions completed, of which approximately 82,650 were first actions for continuing applications. Thus, one might reasonably conclude that had the 82,650 first actions for continuing applications been spent instead on new applications, it would have more than covered the increase in inventory, representing at least a modest reduction in the backlog of inventory.

²⁴ The National Academy of Public Administration has estimated that this under funding alone has cost the USPTO 8 8 months of increased pendency.

²⁵ New hires now tend to value time off more than overtime compensation, ultimately reducing projected levels of overtime hours to be worked per examiner from 125 to 90.

In response to these challenges, PPAC and the USPTO have vigorously debated the merits of a multi-pronged strategy to halt the increasing pendency and to eventually reverse the trend. The following chart graphically illustrates the impact that some of these options which are being pursued and/or considered potentially have on pendency.



The yellow line shows the effect of continued aggressive hiring (1000 examiners per year) coupled with major assumptions of application filings that continue at a rate of 6% as well as increased complexity of applications filed, modest production gains from outsourcing the PCT search function, and assumed decreases in attrition from 10% to 7% through fiscal year 2007 and beyond.²⁶ This shows that hiring alone is not likely to yield sufficient reduction pendency, especially if any of the major assumptions do not hold, as for example increased filings above 6%,²⁷ or attrition rates above those assumed. It also presents significant challenges apart from pendency reduction, such as the ability to effectively train and supervise that many new examiners. The USPTO is already working on solutions to this challenge.²⁸

²⁶ The 7% rate occurs for years 2009 and on.

²⁷ For example, preliminary data on filings already is showing an increase of over 7%.

²⁸ In January 2006, the Patent organization will pilot an eight-month, university-style training program for new patent examiners. The program will provide participants with a more structured initial training so that they will have a better understanding of the examination process and be better equipped to effectively contribute after assignment to a technology center. The existing Patent Examining Initial Training program will run concurrently until the new university concept is reviewed and fully implemented. Moreover, a retention team has been put in place to study retention issues and develop a plan to reduce the fiscal year 2005 attrition rate of 10.1% to 7% by fiscal year 2009.

The blue line shows the added effect of (in addition to effect resulting from the assumptions for the yellow line) putting into place rule changes that will result in reducing the number of continuations filed and the number of claims presented (e.g., the blue line assumes a 2.5% reduction for fiscal years 2006 – 2007 in the number of claims and a 2.5% reduction for those years in the number of continuations/RCEs filed).

It is anticipated that the combination of all of these efforts – rule changes, outsourcing, hiring and attention to retention issues – have the *potential*²⁹ of working to reduce projected total pendency from more than 46 months in fiscal year 2010 to approximately 31 months, as shown by the blue line above, *provided that* other major assumptions as noted do not significantly change.

The USPTO is already working to implement as many of these options as it can, short of the noted rule changes that will affect applicant behaviors. For example, during this fiscal year, two contracts were awarded to commercial entities to complete a percentage of PCT applications on the USPTO's behalf. Initially, the outsourced PCT search reports will be thoroughly checked by the USPTO for quality purposes. If the quality of the service is fully satisfactory, the outsourcing will be expanded. Each PCT application that is not handled by a USPTO examiner represents time that can be devoted to the completion of another U.S. application.

As noted earlier in this Report both PPAC and the USPTO believe that improving patent quality is a *mutually shared* responsibility of both applicants and the Office. There are certain applicant behaviors which continue to exacerbate the ability of the Office to perform focused, timely and quality examinations in certain cases. Late filing of prior art in information disclosure statements (IDS) or filing huge numbers of references in an IDS unduly complicate examination and tax examination resources. Similarly, filing applications with inordinately large numbers of claims, or delaying issuance of an application by filing one continuation after another are all practices that in various ways unduly encumber the Office and complicate the examination process.

On the other hand, IDS practice also serves the legitimate interest of ensuring that relevant art is disclosed during examination in accordance with the duty of candor. Continuation and request for continuing examination practice, as well as presenting a variety of claim types and scope, also all serve a legitimate interest in ensuring that applicants are given a full and fair opportunity to fully claim an invention and develop the scope of the claims through examination.

PPAC and the Office have spent considerable time in this fiscal year discussing the shared responsibility of applicants to assist in improving patent quality. The USPTO is now in the process of preparing to publish proposed rule changes in the areas of IDS practice, changes to practice for continuing applications and requests for continuing examination, and changes to the practice for the examination of claims based on the number of claims and whether they are patentably distinct from other claims. The USPTO believes that these proposed rule changes will ultimately lead to a more balanced sharing of the responsibility for improving patent quality.

²⁹ All of this taken together still represents in many ways a “best case” scenario, and in that sense is subject to a high risk of not being able to completely turn around the increasing pendency, as opposed to merely slowing down the rate of increase.

Briefly summarized, to date the contemplated rule changes include the following:

- **Changes to Practice for the Examination of Claims in Patent Applications** – This proposal includes a representative claims approach where an applicant will designate the most important claims for initial examination. Once these initial claims are in condition for allowance, all claims will be fully examined. A maximum number of initial claims will be determined that will be intended to balance the need for focused examination with the applicants' ability to fully claim the invention.
- **Changes to Practice for Continuing Applications, Requests for Continued Examination Practice, and Applications Containing Patentably Indistinct Claims** – With this proposal, an applicant will be able to file a limited number of continuations or RCEs as a matter of right. Any additional continuations or RCEs may thereafter only be filed by an applicant provided there is a showing that the additional reasons for prosecution could not have been presented earlier.
- **Changes to Information Disclosure Statement Requirements and other Related Matters**³⁰ – In this proposal, an IDS with 25 or fewer items (cumulative for the application) will not be affected by the rule change (this is the case for 90% of all applicants today). For any item over 30 pages, the applicant or applicant's attorney must indicate the portions that caused the item to be cited. If more than 25 items are submitted, the rule will impose requirements that assist and expedite examiner's consideration of the IDS, such as summarizing the references as to their relevance and showing that they have been timely cited.

With these rule changes, the USPTO anticipates an average efficiency gain from the examining corps of 5%.

While PPAC agrees with the objective of a more balanced sharing of the responsibility for improving patent quality as between both applicants and the Office, where the line should be drawn to achieve that balance and whether these proposed rule changes adequately reflect that balance will require continued dialog between PPAC, the Office and the diverse community of users. We expect this dialog will continue in coming months.³¹

³⁰ This proposed rule has been discussed conceptually with PPAC but it has not been presented to PPAC yet for PPAC formal review and comment.

³¹ The USPTO has advised PPAC that it plans an "extended" comment period for the first two rule packages it plans to release (Changes to Practice for the Examination of Claims in Patent Applications, and Changes to Practice for Continuing Applications, Requests for Continued Examination Practice, and Applications Containing Patentably Indistinct Claims). The Office also plans to hold a series of "town meetings" to aggressively reach out and seek input, solutions or alternatives in response to the proposed rule changes.

V. OTHER MATTERS OF NOTE DURING FISCAL YEAR 2004

A. COMBATING PIRACY AND COUNTERFEITING

As part of the Administration's Strategy Targeting Organized Piracy! (STOP!) initiative,³² during this fiscal year the USPTO launched an intensive communications campaign to educate small businesses on protecting their intellectual property in the United States and abroad. Small-business conferences were held by the USPTO in Salt Lake City, Phoenix, Austin, and Miami. Other USPTO conferences held in Baltimore and Detroit focused exclusively on challenges associated with doing business in China. All conferences had strong attendance and overwhelmingly positive feedback.

The USPTO staffed the STOP! hotline, 1-866-999-HALT, which lets callers receive information from USPTO attorneys with regional expertise on intellectual property rights and enforcement.

This year the USPTO also provided the STOP! gateway website (www.stopfakes.gov), with "intellectual property toolkits" to help businesses protect their rights in other countries, such as China, Korea, and Mexico. The USPTO also added www.stopfakes.gov/smallbusiness to meet the specific needs of smaller companies seeking to protect intellectual property rights.

In January, the USPTO unveiled a comprehensive plan of technical assistance and cooperative exchanges with their counterparts in the Chinese government to improve China's intellectual property rights administration and enforcement. Through the Joint Commission on Commerce and Trade (JCCT) Intellectual Property Rights (IPR) Working Group, and together with the Office of the USTR, the USPTO helped negotiate a comprehensive set of commitments from the Chinese government to reduce counterfeiting and piracy in China.

The Office also established the USPTO Global Intellectual Property Academy to consolidate and expand current intellectual property training programs for foreign government officials. As part of its ongoing technical assistance, the USPTO conducted programs on IPR protection and enforcement issues for officials and private sector representatives from Southeast Asia, the Middle East, North Africa, Latin America, Russia, Turkey, and other countries.

An initiative was begun to place USPTO IPR experts in Brazil, China, India, Russia, and other developing regions, working closely with the United States and Foreign Commercial Service and the Department of State. These experts will press for improved IPR protection for American businesses and coordinate training and technical assistance efforts to stop piracy and counterfeiting.

³² In October 2004, the Administration launched the STOP! initiative, which is a comprehensive U.S. Government-wide initiative created to combat trade in pirated and counterfeit goods. The initiative is a collaboration of the Departments of Commerce, Justice, Homeland Security, and the Office of the USTR.

B. PERFORMANCE, ACCOUNTABILITY AND FINANCIAL REPORTING

PPAC notes that for a third consecutive year, the USPTO was awarded the Association of Government Accountants' Certificate of Excellence in Accountability Reporting for its fiscal year 2004 Performance and Accountability Report.

The USPTO also received an unqualified opinion from its independent auditors on the USPTO's fiscal year 2005 financial statements for a 13th consecutive year.

C. GOVERNMENT ACCOUNTING OFFICE (GAO) REPORTS

The Government Accounting Office (GAO) issued two reports this year. The USPTO agreed with the recommendations in the report entitled "Intellectual Property: USPTO Has Made Progress in Hiring Examiners, but Challenges to Retention Remain." In recent discussions with PPAC the USPTO reported on steps taken to develop a communication plan and labor management strategy to inform employees about progress on initiatives, successes and lessons learned. The USPTO also is developing a more formalized technical program for patent examiners to ensure their skills are fresh and ready to address state-of-the-art technology in patent applications.

In response to the second GAO report, "Intellectual Property: Key Processes for Managing Patent Automation," the USPTO advised PPAC that it generally agreed with the GAO's recommendations and with the need for certain improvements, such as developing architectural linkages to the planning process, implementing a capital planning and investment control guide, and completing planned organizational changes, although it disagreed with the GAO finding related to project management and cost accounting. The USPTO already has started implementing many of the GAO recommended improvements.

D. APPELATE PARTICIPATION BY THE USPTO

Under United States Code (U.S.C.) § 35, the Under Secretary of Commerce for Intellectual Property and Director of the USPTO advises the President and other agencies on intellectual property policy, both domestic and international. For example, in addition to defending cases in which the USPTO is sued for decisions it has rendered, the USPTO advises the Solicitor General of the United States on intellectual property matters before the Supreme Court.

Last year the USPTO assisted the Solicitor General in formulating the government's position before the Supreme Court in several important intellectual property cases. For example, the USPTO assisted the Solicitor General's Office with the Government's brief in *Metro-Goldwyn Mayer Studios v. Grokster*, 545 U.S. ___, 125 S. Ct. 2764 (2005). In keeping with the government's recommendation, the Supreme Court held that one who distributes file-sharing software designed for use in copyright infringement by third parties is liable for any resulting acts of infringement by those third parties.

The USPTO also assisted the Solicitor General's Office with the government's brief in *Merck KGAA v. Integra Life Sciences I, Ltd., et al.*, 545 U.S. ___, 125 S.Ct. 2372(2005), in which the

Supreme Court held that the safe harbor provisions of 35 U.S.C. § 271(e)(1), which exempt from patent infringement the use of a patented invention “solely for uses reasonably related to the development and submission of information” to the Food and Drug Administration (FDA), extend to experiments using patented drugs for developing new drugs which will be the subject of an FDA submission, not just to clinical trials related to an FDA submission.

Lastly, in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005), the Federal Circuit asked the USPTO to brief the proper role of technical dictionaries and the patent specification when construing patent claims, which is a core issue in both patent application prosecution and patent infringement litigation. In keeping with the USPTO’s amicus brief, the Federal Circuit reaffirmed the principle that the specification is the best guide to the meaning of a disputed patent claim term, and rejected an approach to claim construction that gives primacy to dictionaries over the specification.

E. COMPUTERIZED TESTING OF APPLICANTS FOR REGISTRATION TO PRACTICE

This year the Office of Enrollment and Discipline (OED) fully implemented computerized testing of applicants for registration to practice in patent cases before the USPTO. Several important advantages of computerized testing that were expected have been realized. These include: steady-state, non-cyclical workflow in processing applications and preparing examination questions; and greater convenience for applicants when scheduling examination; and same day turnaround for processing examination results.

VI. CONCLUDING OBSERVATIONS

PPAC commends the USPTO for the significant achievements made in this fiscal year with respect to advancing its strategic goals in the area of patent quality. The USPTO has implemented a number of initiatives in this year which we believe hold real promise for improving patent quality. Likewise, we believe the USPTO has made meaningful progress toward its strategic objective of e-government, especially in regard to the prospect which the EFS Web portal holds for providing a much more user friendly e-filing tool, and therefore much greater potential for compliance by users in moving to electronic filing of patent applications.

On the other hand PPAC believes that pendency continues to loom as a problem of major proportion. During a full two-day executive session held last April, PPAC and the USPTO engaged in extensive discussion of patent quality and pendency. At the end of that process the members of PPAC were polled as what they saw as the most significant challenges ahead of the USPTO. The overwhelming response was pendency, and closely related to it, the significant challenge of hiring, training and mentoring, and retaining some 2000 new examiners during this year and next year.

That is not to say that PPAC disagrees with prioritizing patent quality as the number one priority of the Office under its *Strategic Plan*. However, we see the two objectives of quality and pendency as inextricably linked. On the one hand, if the sole concern were improving patent quality, the Office could issue a mere handful of patents each year which could likely be assured

of having the highest possible quality. On the other hand, if pendency were the predominant or only concern, the Office could simply move to a registration system and rapidly reduce pendency to a mere matter of weeks. Clearly, there must be a balance between the two, which at times compete with one another. This was demonstrated by the experience of the Office in this last fiscal year in regard to the time and resources expended to insure review of every allowed application in the second half of the year. While this resulted in dropping the allowance error rate from 5.2% at mid-year to below the target rate of 4%, the result was to reduce the overall allowance rate from 62.5% in fiscal year 2004 to 58.7% for this fiscal year, and adversely affected the allowance rate even in those TCs that were already achieving allowance error rates below the target 4%.

In addressing the now-protracted problem of reducing pendency, we believe several things should be borne in mind.

First, the causes for the current backlog and increasing patent pendency are varied and complex, as noted in our preceding discussion. The USPTO must address the challenges of rising workloads, the shift of applications from traditional arts to more complex technologies, changes in the timing of some of the milestones of the *Strategic Plan* which will delay the efficiency gains outlined in the *Plan*, and last but not least, finding ways to educate applicants and insure greater shared responsibility by them in helping the Office avoid undue expenditure of examining resources.

Second, it must be remembered that the current challenges presented in terms of growing backlog and pendency were not created overnight. They are in large part a result of over a decade's worth of unpredictable and often inadequate resources. Nor will they be solved overnight. It will take sustained, dedicated effort on the part of the Office and applicants, working together. Thus, most important of all is the critical need for continued Administrative and Congressional support for long-term funding stability. Only with stable, long-term funding will the USPTO be able to create a predictable environment for planning purposes. Congress must keep the current fee increases in place beyond 2006, and must insure that the USPTO's appropriation continues to comport with the policy set by the Administration of fully funding the USPTO with all user fees expected to be paid to it during each budget year. Adequate funding will be essential in the coming years in helping the USPTO accomplish its mission and the related strategic goals of quality, pendency and e-government.

Lastly, we again express our appreciation to the men and women of the USPTO for their continued hard work and dedication in the face of what are surely some of the most challenging times the Office has faced.

PPAC looks forward to continuing its work with the USPTO in facing these challenges and continuing to build on the successes of this year, in the coming year.

Respectfully Submitted,

A handwritten signature in black ink, reading "Rick D. Nydegger". The signature is written in a cursive, flowing style with a large, stylized "R" and "N".

Rick D. Nydegger, Chair
Patent Public Advisory Committee

EXHIBIT F

ACUSHNET COMPANY

ACUSHNET COMPANY <i>Chairman & Chief Executive Officer</i>
Wally Ulthain

GOLF BALL OPERATIONS <i>Executive Vice President & General Manager</i>
Herb Boehm GOLF BALL OPERATIONS

REDACTED

REDACTED

GOLF BALL OPERATIONS

**GOLF BALL OPERATIONS
Executive Vice President &
General Manager**

Herb Boehm

ACUSHNET COMPANY

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**Senior Vice President
Golf Ball Research & Development**

Bill Morgan

Golf Ball Research & Development

Golf Ball Research & Development

Senior Vice President Golf Ball Research & Development Bill Morgan	GOLF BALL OPERATIONS
Vice President Research & Development Product Development Mike Sullivan	Product Development

REDACTED

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